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Grizzly Bear reintroduction to the Bitterroot ecosystem : perceptions of individuals with land-base occupations

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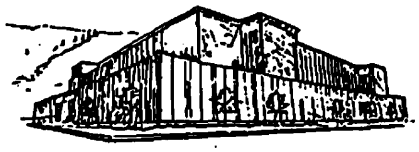

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GRIZZLY BEAR REINTRODUCTION TO THE BITTERROOT ECOSYSTEM: PERCEPTIONS OF INDIVIDUALS WITH LAND-BASE OCCUPATIONS

By

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Grizzly Bear Reintroduction to the Bitterroot Ecosystem:
Perceptions of Individuals with Land-Based Occupations

Chairperson: Dr. Sarah Halvorson 

Over the past 150 years grizzly bears (*Ursus arctos horribilis*) have been eliminated from ninety-eight percent of their original range in the contiguous United States. In conjunction with these trends the grizzly bear has been listed as a threatened species in accordance with the Endangered Species Act (ESA) since 1975. Today in the lower forty-eight states small fragmented populations exist in portions of Washington, Montana, Idaho, and Wyoming. In the late 1990's the United States Fish and Wildlife Service proposed a plan to reintroduce grizzly bears to the Bitterroot Ecosystem. After the changing of presidential administrations in 2000 the reintroduction plan was put on hold for an unlimited amount of time.

A qualitative study was conducted in the fall and winter of 2004-2005 to obtain the perceptions and attitudes of individuals with land-based occupations regarding grizzly bears and the proposed grizzly bear reintroduction to the Bitterroot Ecosystem. The study entailed thirty in-depth semi-structured interviews conducted with study participants in western Montana and east central Idaho.

Overall, participants had favorable attitudes toward grizzly bears, but the majority was opposed to reintroduction. Concerns raised included negative economic impacts, fear for personal safety and the safety of family members, restricted access to federal lands, distrust of government agencies involved with the reintroduction, previous negative attitudes developed by the recent wolf reintroduction, hostility to outside interests, and the suitability of the Bitterroot Ecosystem as habitat for grizzly bears. The results suggest that further examination should be done to develop a sound grizzly bear reintroduction plan sensitive to those with land-based occupations.

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LIST OF ABBREVIATIONS

BE	Bitterroot Ecosystem
ESA	Endangered Species Act
DEIS	Draft Environmental Impact Statement
DOW	Defenders of Wildlife
FOAM	Fishing Outfitters Association of Montana
FWP	Montana Fish, Wildlife and Parks
IDFG	Idaho Department of Fish and Game
IGBC	Interagency Grizzly Bear Committee
ITRR	Institute for Tourism and Recreation Research
IUCN	International Union for the Conservation of Nature
IOGA	Idaho Outfitters and Guides Association
MFWP	Montana Department of Fish, Wildlife, and Parks
MOGA	Montana Outfitters and Guides Association
NCDE	Northern Continental Divide Ecosystem
NCE	North Cascades Ecosystem
RPA	The Rockies Prosperity Act
RVD	Recreation Visitor Days
SCYE	Selkirk/Cabinet/Yak Ecosystem
USFWS	United States Fish and Wildlife Service
YE	Yellowstone Ecosystem

CHAPTER ONE

INTRODUCTION TO THE STUDY

This study examines the social dynamics of the reintroduction of grizzly bears (*Ursus arctos horribilis*) to the Bitterroot Ecosystem (BE)[1]. Due to its size, strength, and ecological role the grizzly bear tends to evoke a range of emotions – awe, respect, fear. Most people identify with bears and have a positive view of them because they are aesthetically appealing, intelligent, of large size, have the capacity to stand erect, and have an omnivorous diet (Kellert 1993). Despite positive overall attitudes towards bears, attitudes toward bear reintroduction from individuals with land-based occupations are more negative. These negative attitudes are linked to the potential danger to humans and the destruction of livestock and crops (Clark *et al.* 2000). This study investigates the perceptions and attitudes of local residents towards grizzly bears and the notion of having grizzly bears reintroduced near and in areas where they live, perform business activities, and recreate.

The distribution and number of most bear species have been dramatically reduced and fragmented because of habitat loss, over exploitation, or some combination of both (Servheen 1990). Thus, the reintroduction of bears has been the subject of much renewed interest both nationally and internationally. The International Union for the Conservation of Nature (IUCN) Reintroduction Specialist Group defines *reintroduction* as an attempt to establish a species in an area that was once part of its historical range, but from which

[1] The United States Fish and Wildlife Service in agreement with the Interagency Grizzly Bear Committee identified six areas in Idaho, Montana, Washington, and Wyoming that have habitat suitable for self-sustaining grizzly populations. The Bitterroot Ecosystem in central Idaho and western Montana is one of these areas.

it has been extirpated or become extinct (IUCN 1998). Reintroduction is a costly and time-consuming enterprise with only about eleven percent of all species reintroductions resulting in viable populations (Beck *et al.* 1994 from Earnhardt 1999). However, most reintroductions fail (Griffith *et al.* 1989). Reading and Kellert (1993) proposed that many of these failures occur because the socioeconomic and political aspects of reintroduction programs are not adequately addressed. Poor public acceptance and understanding of bears are the main reason some reintroduction programs have been derailed (Clark *et al.* 2002). For example, local public and political pressures have had significant influence on the hold on the decision to reintroduce grizzly bears to the BE.

Kellert (1993, 45-46) describes several "demographic distinctions" regarding how people view or value wildlife species, and in particular their perspectives of bears. These demographic distinctions include: 1) "human dependence on the land and natural resources as reflected in rural residency, property ownership, and agricultural and other resource-dependent occupations"; 2) "socioeconomic status measured by education and income"; and 3) "age and gender." Of particular concern are the bears' impacts on resource dependent populations such as farmers, loggers, and miners by the presumption of restricted access to and use of natural resources on both private and multiple use public lands and loss of livestock to predation (Reading and Kellert 1993).

Much scientific research has been done on the biology and management of grizzly bears, but very little research has been done that looks into the social relationship created between humans and a reintroduced large predator such as the grizzly bear. Clark *et al.* (2001) state that too little emphasis has been placed on the sociopolitical aspects of bear reintroduction. Stephen Kellert (1985 and 1993), a social ecologist, has conducted

research on public perceptions of predators with primary focus on wolves, coyotes, and bears. Few bear reintroduction efforts have occurred, fewer have been successful, and fewer still have been adequately documented (Clark *et al.* 2002).

In this research semi-structured interviews were used to examine the attitudes, opinions, and knowledge towards grizzly bears and grizzly bear reintroduction to the BE of individuals who have an economic tie to the land. Interviews were conducted primarily with ranchers and outfitters who live and/or operate businesses in and around the BE. The primary focus of the study centered on Ravalli County, Montana and Lemhi County, Idaho.

The Grizzly Bear Reintroduction:

Policies and Controversies

In North America, the grizzly bear's penchant for hunting alone and for fiercely defending its young has long made it a symbol of the frontier spirit (Whitman 2001). It is widely recognized as an icon representing all things *wild* in the rugged North American west. This iconic status led it to being a species of concern across North America. Despite its rugged image and tendency to avoid humans, experts argue that the grizzly bear is more vulnerable to human activity than any other wildlife species in the Northern Rockies (Lipske 1991, Mattson and Merrill 2002, Neilson *et al.* 2004).

Grizzly bears tend to frequent lower elevations in the spring in search of food while the upper elevations are still snow covered. The majority of human settlement tends to be in these lower elevations. Grizzly bears are naturally uncomfortable with

human presence, but are known to be attracted to human garbage and livestock. Grizzly bears are known to prey on domestic livestock for food (Claar *et al.*1992). Bears that become habituated to humans or human foods are considered dangerous and must be relocated and sometimes destroyed (Mattson and Merrill 2002).

Humans play a major role in grizzly bear mortalities. Mattson and Merrill (2002) found that in the contiguous forty-eight states grizzly bears die primarily because humans kill them. Mattson *et al.* (1996) provide evidence from bears radio tracked in the northern Rocky Mountains that pervasive human-caused mortality continues. Frequency of contact with humans is likely most affected by the number of humans residing in an area. The extent of vegetation, the complexity of local topography, the juxtaposition of rich bear habitats with those favored by humans, and the presence of livestock and croplands also have a high likelihood of affecting the frequency of contact between bears and humans (Mattson and Merrill 2001).

Grizzly bear habitat and range in the United States continues to decrease. Between 1850 and 1920 grizzly bears were eliminated from ninety-five percent of their original range (Mattson and Merrill 2002). Unregulated killing of grizzlies continued in most places through the 1950's and resulted in a further fifty-two percent decline in their range between 1920 and 1970. In this time period, grizzly bears were eliminated from ninety-eight percent of their original range in the contiguous United States. One could count on, in those simpler times, a near unanimity of viewpoint regarding the most appropriate way to deal with grizzly bears – 'get rid of them'(Kellert 1985).

In the contiguous forty-eight states, Grizzly bears remain only in remote areas larger than 26,000 km^2 (10,000 mi^2). In conjunction with these trends the grizzly bear has

been listed as a threatened species in accordance with the Endangered Species Act (ESA) since 1975. Today in the lower forty-eight states small fragmented populations exist in portions of Washington, Montana, Idaho, and Wyoming. The United States Fish and Wildlife Service (USFWS) has recognized five suitable grizzly bear recovery areas including: the northern Continental Divide Ecosystem (NCDE) in Montana, the Selkirk/Cabinet/Yaak (SCYE) and Bitterroot Ecosystems (BE) in Montana and Idaho, the Northern Cascades Ecosystem (NCE) in Washington, and the Yellowstone Ecosystem (YE) in Montana, Wyoming, and Idaho (Claar *et al.*1992). With the exception of the BE varying grizzly bear populations are recognized to exist in these ecosystems (USFWS 2001).

Grizzly bears are important predators and seed dispersers in the ecosystems in which they live (Ballenger 2002). With only five relatively small ecosystems, the existing grizzly bear habitat needs to expand to increase grizzly bear populations (Jonkel 2001). Grizzly bear populations are so small that many believe that if measures are not taken to increase their numbers, the grizzly bear will be doomed to extinction (McNamee 1992). Researchers argue that they cannot be expected to expand east to the agriculturally rich Great Plains, and they cannot be expected to expand and survive in areas of private or corporate land developments (Jonkel 2000).

In November 2000 the USFWS announced its plans to release five grizzly bears into the Bitterroot backcountry each year for five years beginning in 2002. The goal of the reintroduction is to have two hundred to three hundred grizzly bears inhabiting the BE (USFWS 2000). If this goal is met it would increase the number of grizzly bears in the lower forty-eight states by thirty percent. Experts believe that this goal could take

anywhere from fifty to one hundred years to reach due to the grizzly bear's slow reproductive rate[2] (McNamee 1992).

The USFWS grizzly bear reintroduction plan has been controversial since its inception. The reintroduction process cost in excess of $700,000 without a single bear being moved (Clark *et al.* 2002). After the transition of presidential administrations, newly appointed Secretary of the Interior Gale Norton announced in June of 2001 that no action would be taken on the grizzly bear reintroduction plan in the BE. Local public and political pressure forced the USFWS to put a hold on the earlier decision to go along with the reintroduction plan (Doddridge 2001). Idaho governor Dirk Kempthorne and Montana governor Judy Martz opposed the reintroduction plan. Kempthorne and the Idaho Department of Fish and Game filed suit in U.S. district court against the Clinton Administration's grizzly bear reintroduction plan in 2001. He claimed that the plan violated the 10th amendment of the U.S. constitution regarding state sovereignty. The federal suit (State of Idaho 2001) stated:

> The federal government's grizzly bear program under the Endangered Species Act unconstitutionally imposes obligations on the state's executive branch of government, usurps the State of Idaho's sovereign and traditional right to regulate land use and fish and wildlife within its borders, interferes with the State of Idaho's duty to protect its citizens from physical harm, and compromises the ESA protection currently afforded existing grizzly bears.

Although the plans for reintroduction have been stymied, reintroduction of grizzly bears into the BE remains a possibility in the future and is still of great concern

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[2] Grizzly bears have the lowest reproductive rate of any North American mammal. One reason for this low rate is the late sexual maturation of female grizzlies, as they do not start breeding until 5 to 8 years of age. If optimum conditions exist, breeding females will produce only one to three cubs per litter at 2 to 3 year intervals. One third of all litters die before the end of their first year, and at least 70 per cent of all young die before reproducing.

for residents of western Montana and Central Idaho. An understanding of people's attitudes towards and knowledge of grizzly bears would be useful for predicting the impact and potential success of a grizzly bear reintroduction program to the BE.

Research Questions

This research addresses the following questions: What are the attitudes of those that make their living off the land toward grizzly bears and grizzly bear reintroduction? What factors influence these local attitudes? What issues and concerns need to be examined and addressed to improve public relations regarding grizzly bear reintroduction? It is critical that public support, particularly local support, for reintroduction programs be garnered from the outset. Wildlife managers may be far too conservative in acknowledging public viewpoint towards grizzly bears and their population enhancement and recovery (Kellert 1993). As such, the questions probed by this study are designed to address the complex socio-political aspects of grizzly bear reintroduction.

Purpose of the Study

The purpose of this qualitative research is to explore the human dimensions of grizzly bear reintroduction into the designated BE. Very little research has been conducted that examines the relationship between humans and a reintroduced large predator such as the grizzly bear, in part because predator reintroduction on this scale has never been undertaken in the United States. The knowledge, attitudes, and opinions of

thirty ranchers and outfitters in the Bitterroot/Salmon Valley of western Montana and east-central Idaho are examined. Qualitative research of this kind cannot be generalized to the population as a whole (Silverman 2005). The study provides an in-depth examination of the beliefs and thought processes of *these* thirty respondents. The aim of this study is to obtain rich, detailed thoughts and opinions from those that will be affected in multiple ways by a reintroduction.

Individuals with land-based occupations were chosen as study participants because their livelihoods and the close relationship they feel to the land may be impacted directly by the reintroduction of grizzly bears. Ranchers and outfitters might have to adapt some of their management and business practices as well as their day-to-day activities in response to the presence of grizzly bears. Property protection and personal safety are also issues that are of great concern to those living and working in this area. The hope is that policy discussions and debates related to grizzly bear reintroduction will be served by a clearer understanding of the attitudes that local residents have towards grizzly bear reintroduction.

Chapter Summary

The purpose of this study is to examine and explore the human dimensions of grizzly bear reintroduction into the BE. This chapter briefly introduced the issue of grizzly bear reintroduction and its surrounding controversy. The BE grizzly bear reintroduction plan and the plight of the grizzly bear in the lower forty-eight states was briefly introduced and will be discussed more in detail in Chapter Two. Chapter Two

will also situate this study within a broader conceptual framework of bear/society interactions.

CHAPTER TWO

CONCEPTUAL BACKGROUND ON GRIZZLY BEAR/SOCIETY INTERACTIONS

This chapter introduces the conceptual background on grizzly bear/society interactions, as drawn from various literature pertaining to the subject. First, I examine why grizzly bears were extirpated from much of their natural range in the lower forty-eight states. Secondly, I examine the issue of grizzly bear reintroduction to the BE over the past ten years. Third, I describe the ESA, its policies, its obligations to wildlife, and public outcry regarding it policies. Lastly, I review the growing sub-discipline of animal/society interactions within geography and its allied social sciences.

This review of the literature associated with grizzly bears will add theoretical and empirical insights to this study. I will draw from past studies on human/animal relations and use these findings to help guide this research. The findings will shed light on the attitudes of local citizens towards grizzly bears and the politics of grizzly bear reintroduction that may be used in future discussions regarding similar animals and potential reintroductions.

Grizzly Bear Populations: Spatial and Temporal Dimensions

Grizzly bears have been extirpated from much of their natural range in the contiguous United States. This eradication was partly due to the settlement of the West, manifest destiny, and federal agencies to claim and incorporate this territory. Historically, western settlers had a detrimental effect on grizzly bears in the United States

(Mattson and Merrill 2002). The settlers competed with grizzly bears for use of space and the settlers also diminished the abundance of bison, a grizzly bear food source. Native Americans also killed grizzly bears for prestige, oil, and body parts (Clark and Casey 1992); however, their relationship was not motivated by the desire to eradicate this species on the same scale as the settlers.

The historical range of the grizzly bear extended across the western part of the Northern Hemisphere. They existed in habitats ranging from desert to coastal rain forest and plains to arctic tundra. Through the years grizzly bear populations declined because human expansion consumed space and resources required by grizzly bears and because they were not tolerated by humans (Claar *et al.* 1992). In the mid 1800's settlers indiscriminately killed grizzly because they were perceived as a threat to human interests. These killings continued through the mid 1900's. By 1950 grizzly bears had been almost completely extirpated from their original range. Today, in the lower forty-eight states grizzlies live in isolated mountainous regions of Montana, Idaho, Wyoming, and Washington. To try and prevent further decline in grizzly bear populations, the grizzly bear was listed as a threatened species under the ESA in 1975.

The grizzly bear was also a widespread inhabitant of the Bitterroot Mountains in western Montana and central Idaho. Lewis and Clark reported an abundance of grizzly bears when they traveled through the Bitterroot Mountains in 1806. They killed at least seven grizzly bears while camped in present day Kamiah, Idaho (Thwaites 1959). Grizzly bears were common in central Idaho up until the early 1800's (Burroughs 1961). At the turn of the nineteenth century there is evidence the grizzly bear populations in the BE died because of excessive killing. Hunters, trappers, settlers and later sheepherders

were responsible for direct mortality and elimination of grizzly bears from the BE (USFWS 2001). Conservative estimates indicate trappers and hunters killed twenty-five to forty grizzly bears annually in the Bitterroot Mountains in the early 1800's (Moore 1996). Hunting, trapping, predator control programs[3], and possibly the decline of anadromous fish stocks led to the virtual extirpation of grizzly bears from the BE by the 1950's (USFWS 2001). The last reported death of a grizzly bear in the BE occurred in 1932 and the last tracks were observed in 1946.

Mattson and Merrill (2001) conducted a study on the extirpation of grizzly bears in the contiguous United States from 1850 to 2000. Since the widespread contact of grizzly bears with European settlers in the mid-1800's the number of grizzly bears in the contiguous United States has dramatically declined. The placement of livestock and agricultural crops, the associated displacement of native foods, and the predictable escalation of depredations by bears have often substantially elevated the per capita lethality of humans to grizzly bears (Storer and Tevis 1955). Grizzly bears killing livestock and disturbing crops led to many conflicts between man and bear. Often times the bear was destroyed. These conflicts led to the belief among cattle barons and sheepmen in the frontier West that "the only good grizzly is a dead grizzly" (Schneider 1977, 22).

Cattle are good grizzly bear food (Knight and Judd 1983). There is evidence that the flood of cattle into the west not only replaced native ungulates lost to over harvest,

[3] In 1915 the Branch of Predator and Rodent Control (PARC) was created within the USDA's Biological Survey Office to carry out "official" strychnine poisoning campaigns that targeted wolves, mountain lions, coyotes, foxes, bears, and eagles on the public domain lands of the West. The purpose was to encourage settlement of the west by opening the land to livestock and farming (Animal Protection Institute 2005).

but also led to short-term increase in grizzly bear numbers, which profited by preying on livestock at a time when husbandry was lax and predator extermination programs were unorganized (Storer and Tevis 1955). By the end of the 1800's, contact with cattle increasingly precipitated lethal responses from effective predator control agents and increasingly attentive owners (ibid).

The last recorded grizzly bear in Texas was killed in 1850 (Schnieder 1977). C.O. Finely and John Z. Means shot a grizzly bear that had killed and eaten a cow. The last official report of grizzly bears seen in North Dakota was when two grizzly bears met their demise by a human in 1897. Most sources claim that Jesse B. Agnew shot California's last grizzly bear near his cattle ranch in 1922. The last grizzly bears recorded in Utah, New Mexico, Arizona, Oregon and Colorado were also killed by humans in 1923, 1933, 1935, 1931, and 1952 (ibid). Today, in the lower United States grizzly bears exist only in Washington, Wyoming, Montana, Idaho, and Alaska.

The near eradication of bison by the 1900's also had an affect on grizzly populations in the Great Plains of the West. The loss of bison as a food source due to human eradication contributed to the decline in grizzly bear populations in the American West. In 1800, 30 million bison roamed the Great Plains, but by the early 1900s, as a result of excessive market hunting and a coordinated campaign by the U.S. government to slaughter the great herds of bison to eliminate Native Americans who occupied the Great Plains, only a few dozen free-roaming bison remained. Mattson and Merrill (2001) found that grizzly bear extirpation was most likely where bears had been associated with bison and where there were high densities of humans. The bison food source also brought

grizzly bears into more frequent, predictably lethal, contact with settlers by concentrating bears at times and places and elevations nearer to humans (ibid).

Native Americans competed with grizzly bears for space and food as well. Perhaps more than any other animal, bears inspire western Native American tribes. Brutal battles between grizzly bears and some Native Americans, armed with primitive weapons, bred respect for grizzly bears (Schneider 1977). In the west, Native Americans shared the same habitat and fed on many of the same foods as grizzly bears. The Lewis and Clark expedition did not observe any grizzly bears in 1804-1806 along the Missouri river in areas occupied by maize cultivating Native American Indian tribes (Burroughs 1961). This finding suggests that along the west-east trending rivers of the Great Plains, sedentary tribes curtailed the distribution of grizzly bears (Mattson 1998). Storer and Tevis (1955) found that grizzly bears coexisted with and perhaps dominated numerous tribes in what is now California. In Mattson and Merrill's (2001) study the mid-1800's distribution of grizzly bears was negatively associated with the highest densities of Native Americans and the distribution of sedentary tribes that cultivated maize.

Today human-caused mortality still has a significant effect on grizzly bear populations. The USFWS (1993) identified five categories for human-based mortality including: (1) direct confrontations with recreation users, (2) attraction of grizzly bears to human and livestock foods and garbage, (3) association with production and protection of livestock, (4) use of bear habitat for human development or uses that decrease habitat quality and or availability, and (5) legal and illegal hunting. A sixth mortality category that has affected populations in the NCDE is accidental collisions between bears and

automobiles and trains (USFWS 1993). Table 1 details human-caused grizzly bear mortalities between 1980 and 2002 in the lower forty-eight states and British Columbia.

Table 1: Human-Caused Grizzly Bear Mortality 1980-2002
Source: IGBC Food Storage Taskforce 2004.

Category	Number	Percent
Human Site Conflicts	124	23
Illegal/Malicious	93	17
Self-Defense	76	14
Unknown	74	14
Mistaken ID	47	9
Livestock Depredation	33	6
Train	30	6
Car	22	4
Capture Mortality	21	4
Human Fatality	14	3
Electrocution	5	1

Grizzly bear range in North America collapsed from one margin (southern) toward another (northern). This explanation is straightforward. Humans continue to be sparser in Canada and Alaska, the current strongholds of grizzly bears, compared to the contiguous United States (ibid). Grizzly bear range collapse in the contiguous United States exhibited a classic pattern of fragmentation followed by extirpations of the smallest populations (ibid). Mattson and Merrill's (2001) results show that changes in human attitudes and behavior have contributed to the survival of grizzly bears from 1970 to the present. There are no guarantees that humans will continue to be as protective of grizzly bears as they have been since 1970. This lack of guarantees is why the USFWS has made it a priority to recover grizzly bears to the BE. Ultimately, humans are responsible for the long-term conservation of grizzly bears.

Past Bear Reintroductions and Grizzly Bear Reintroduction to the Bitterroot Ecosystem

Grizzly bears are part of America's rich wildlife and cultural heritage and once roamed much of the American West. Several programs hoping to improve bear populations have been implemented in the past. From 1977 to 1984, twenty-two adult female black bears were translocated[4] 440 km from northeastern Pennsylvania to augment a sparse population in the southwestern portion of the state (Alt 1995 from Clark *et al.* 2002). Although some native bears were present, the augmentation effort, along with harvest restrictions greatly increased population growth (Clark *et al.* 2002). Prior to augmentation, harvests for the area averaged four bears per year, whereas the recent hunter-kill averages increased to an average of 111 bears per year (ibid).

In a Virginia program, forty-three nuisance American black bears were translocated and released in the southwest portion of the state (Comly 1993 from Clark *et al.* 2002). Mortality was high, with an annual survival rates averaging .37 for females and .12 for males (Clark et al 2002). Thirty-two of the released forty-three bears left the release areas. Although eleven bears remained in the release areas, females did not reproduce in their first year and the population was predicted to decline (ibid).

In Europe from 1989 to 1993, two female and one male brown bear[5] were translocated to lower Austria and Styria (Huber, unpublished data from Clark *et al.* 2002). The area was thought to be inhabited by a male (Rauer 1997 from Clark *et al.*

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[4] Reintroduction differs conceptually from the method of translocation because the primary objective of translocation is not population reestablishment.

[5] Brown bears are any of several large bears of the genus *Ursus,* such as the grizzly and Kodiak bears, inhabiting western North America and northern Eurasia. Brown bears are sometimes categorized as the single species *Ursus arctos.*

2002). One female gave birth to three cubs in 1991 and had a second litter of three cubs in 1993 but died in September of that year in an unexplained accident (Clark et al 2002). The other female gave birth to two cubs in 1993 (ibid). The bear population in Austria was estimated to be between 20 and 25 in 2001.

In France, brown bears were extirpated from the Central Pyrenees by 1990 (Parde 1997 from Clark *et al.* 2002). Two females in 1996 and one male in 1997 were reintroduced from Slovenia. Both females were pregnant at the time of release and had litters of two and three cubs in 1997. A hunter killed one female in the fall of 1997. The level of success from this program has yet to be determined.

In the U.S., four sub-adult female grizzly bears were released to augment the existing population in the Cabinet Mountains in northwestern Montana between 1990 and 1994 (Servheen *et al.* 1995 from Clark *et al.* 2002). The bears were released in the spring and summer, the time of maximum food availability in the area. As of 2001, there was evidence that at least one of the three bears survived and may have reproduced, but without recapture and monitoring, this cannot be verified (Clark *et al.* 2002). A summary listing of world wide bear recovery programs and their outcomes are listed in Table 2.

Today bears are not known to survive in the BE. Proponents of grizzly bear reintroduction to the BE hope to return this prominent omnivore to its native habitat. A public survey found that 64% of the local, 74% of the regional and 77% of the national respondents were supportive of reintroducing grizzly bears to the BE (Duda and Young 1995). The most popular reasons given by the respondents for supporting grizzly bear reintroduction were to return a species that is a missing component of the ecosystem and to save the grizzly bear from extinction. An increased population of grizzly bears

brought on by a reintroduction would greatly improve the recovery potential of the species as a whole. A healthy overall population of grizzly bears would also result in the delisting of the species from the Endangered Species List and ease the regulatory burdens placed on the public. Another benefit of the recovery of grizzly bear to the BE and its potential delisting would include human uses such as hunting. The recovery of the grizzly bear to the BE would also aid in the restoration of Nez Pierce tribe cultural and spiritual values related to the bear (USFWS 2001).

Due to the bears' threatened status under the ESA, the USFWS is mandated by Congress to conserve the grizzly bear and the ecosystems on which it depends on. The reintroduction of grizzly bears into the BE has been considered for over twenty years. In March 1995, the USFWS compiled a brochure to obtain public input on the scope of issues regarding the reintroduction of grizzly bears to the BE. The brochure was sent to 1,100 western Montana and central Idaho residents. It was also distributed at seven open houses held in July, 1995 in Grangeville, Orofino, and Boise, Idaho; Missoula, Helena, and Hamilton, Montana; and Salt Lake City, Utah. The brochure detailed the EIS process, provided background information, identified preliminary issues and alternatives, and described the purpose and need of the proposed reintroduction. The public was urged to comment on the following issues: recovery options and legal classification of grizzlies, possible restrictions on human uses of public lands, geographic boundaries for recovery, location and cost of a reintroduction program, illegal killing of grizzly bears, participatory role of citizens in grizzly bear recovery, concern for human safety, and control of nuisance grizzly bears.

Table 2: Bear Recovery Efforts and Outcomes
Source: Clark *et al.* 2002.

SOURCE	RELEASE AREA	NUMBER RELEASED	DATE	SPECIES	OUTCOME
Yosemite N.P.	Angeles N.F., CA	~30	1930's	Black Bears	Success
Cook County, MN	Interior Highlands, AR	254	1958-1968	Black Bears	Success
Cook County, MN	Northern LA	161	Mid 1960's	Black Bears	Unknown
Byelorussia	Bialowieza, Poland	>11	1938	Brown Bears	Failure
Vienna, Austria (Zoo)	Trentino, Italy	2	1959	Brown Bears	Failure
Zurich, Switzerland and Este Castle, Italy	Trentino, Italy	4	1969, 1974	Brown Bears	Failure
Northeast PA	Southeast PA	22	1977-1984	Black Bears	Success
Shenendoah, N.P.	Southeast VA	43	1991	Black Bears	Unknown
Croatia, Slovenia	Austria	3	1989-1983	Brown Bears	Success
Northern MT	Cabinet Mountains, MT	4	1990-1994	Brown Bears	Pending
Great Smokey Mountains N.P	Big South Fork, TN	14	1996-1997	Black Bears	Pending
Slovenia	Central Pyrenees, France	3	1996-1997	Brown Bears	Pending
Northern and Southern LA.	Central LA	6	1998-2001	Black Bears	Pending
Slovenia	Alps, Italy	7	1999-2001	Brown Bears	Pending
White River N.W.R., AK	Felsenthal N.W.R., AK	10	2000-2001	Black Bears	Pending

In July 1997, the USFWS compiled the report *Summary of Public Comments on the Scoping of Issues and Alternatives for Grizzly Bear Recovery in the Bitterroot Ecosystem* (Appendix A) which summarized the public responses from the brochures and public responses on two draft documents issued by the USFWS. The first document was the *Draft Environmental Impact Statement (DEIS) on Grizzly Bear Recovery in the Bitterroot Ecosystem* and the second document concerned *The Endangered Species Act, Proposed Special Rule 10(j), Establishment of a Nonessential Experimental Population of Grizzly Bears in the Bitterroot Area of Idaho and Montana.*

The DEIS and Proposed Special Rule 10(j) were released for public review and comment on July 1, 1997. Comments were to be received through September 30. The comment period was extended to November 1 based on numerous requests for more time to prepare responses. The comment period was extended a second time to December 1, 1997 following a request from a member of the Idaho Congressional delegation.

Comments on the two draft documents were received from over 24,000 individuals, organizations, and government agencies. These comments arrived in over 2,660 letters, DEIS summary forms, resolutions, and hearing testimonies. Ten petitions were received with over 21,000 signatures. Fifteen form letters were also received. This degree of interest from the public indicates the strong feelings people have toward the possibility of grizzly bear recovery into the BE.

Once the final draft of the *Environmental Impact Statement for Grizzly Bear Recovery in the Bitterroot Ecosystem* was completed and examined, the USFWS outlined four alternatives for grizzly bear reintroduction into the BE. The purpose of Alternative 1 would be to restore grizzly bears to central Idaho. The grizzly bear population would be

designated as "nonessential experimental." An experimental designation allows the USFWS to institute management practices that address local concerns about excessive government regulation on private lands, uncontrolled livestock depredation, excessive big game predation, and lack of state government and local citizen involvement in the program (USFWS 1995). Grizzly bears were designated as nonessential because other grizzly bear populations exist in the conterminous forty-eight states.

Alternative 2, the no action alternative, has of its goal the natural recovery of grizzly bears into the BE. The overall environmental effects of taking no action would likely result in no recovery of grizzly bears in the BE, although it may result in grizzly bear repopulation in one hundred to one hundred sixty years (ibid).

Alternative 3 would prevent grizzly bear recovery in the BE by changing current laws and allowing unrestricted take of grizzly bears by the public. The ESA defines "take" as: To harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct. Under this alternative, the potential contribution of an additional population of grizzly bears to the recovery effort in the conterminous United States would never be realized. This alternative would require new legislation by Congress to change the ESA, and legislation by Idaho and Montana to change state laws that protect grizzly bears in the BE (ibid).

Alternative 4 would seek restoration of grizzly bears as a threatened population with full protection of the ESA and habitat restoration. This alternative was designed to achieve recovery through augmentation of a threatened population of grizzly bears and extensive habitat protection and enhancement to promote natural recovery. This alternative would allow less management flexibility to address local concerns about

livestock depredation, restrictions to natural resource programs on public and private lands, and impacts to other wildlife species (ibid). Advocates for alternative 4 believe that it would protect any existing grizzly bears in the BE and added bears. They also contend that alternative 4 would establish necessary wilderness corridors that would allow the expansion of the species.

Alternative 1 was the proposed action selected by the USFWS because they believe that the only way of boosting the long term prospects for grizzly bears in the contiguous forty-eight states is to develop a third major population over time. They state that the BE offers one of the last, best places for recovering grizzly bears (USFWS 2000).

Wolf Reintroduction to Central Idaho

The gray wolf (*Canis lupus)* was reintroduced to central Idaho beginning in 1995 as part of the Northern Rocky Mountain Wolf Recovery Plan (Fritts *et al.* 1997). Strong opposition from some factions within the region forestalled the action for twenty years. The USFWS developed a reintroduction plan in the summer and fall of 1994. Shortly thereafter in 1995 fifteen captured wolves from Canada were released into Central Idaho. After five months in the wild, thirteen of the fifteen released wolves were alive and in the intended recovery area. One wolf had been illegally killed. The progress of the reintroduction program in its first year exceeded expectations. An additional twenty wolves were reintroduced in 1996 (IDFG 2005). The number of wolves in Idaho has increased, and by December 2004 there are approximately 420-500 wolves, twenty-seven verified breeding pairs and approximately forty-three documented packs well distributed

from Interstate 90 south to Interstate 84 in central Idaho. In 2003, the USFWS reclassified, or down-listed wolves from endangered to threatened in Idaho north of I-90, and northern Montana.

Surveys conducted to access public opinion about reintroducing wolves showed that (1) a majority of all residents sampled in the Northern Rocky Mountains supported wolf recovery; (2) strong concern about depredations on livestock existed among rural people who raise livestock; and (3) any restrictions on the commercial and recreational use on public lands to promote wolf recovery would not be favored by the regional public (Bath 1991 from Fritts *et al.* 1997). Several conservation groups actively promoted wolf recovery in the 1980s, while other interest groups—primarily livestock and hunting interests—strongly opposed it (Fischer 1995 from Fritts *et al.* 1997).

Prior experience from wolf reintroduction to Idaho and its outcome influenced the attitudes of many participants in this study toward grizzly bear reintroduction. The proceedings from the grizzly bear reintroduction efforts have strong similarities to the way wolf reintroduction was implemented in Idaho. In both reintroduction efforts livestock and hunting interests strongly opposed the reintroductions and concerns were raised regarding restrictions on the commercial and recreational use on public lands in order to support the wolf and grizzly bear recovery plans. The wolf reintroduction's influence on grizzly bear reintroduction will be further discussed in Chapter Five.

Endangered Species Act

The grizzly bear has been listed as a threatened species under the ESA since 1975. The ESA itself has met large amounts of scrutiny from the public. The ESA is arguably

the most powerful and ambitious wildlife law ever enacted. This section focuses on the importance of human values in endangered species policy.

The ESA represented the most powerful declaration ever to preserve and protect wildlife, theoretically subordinating all other considerations to the imperative of preventing extinction of species (Kellert 1996). The act proclaimed that the government has a solemn duty to protect animals on the behalf of the American people, not just for their commercial and material value, but also because they represent irreplaceable ecological, scientific, recreational, aesthetic, and ethical values as well. The ESA required the review of all federal actions that might compromise a species existence to be reviewed and if these actions proved harmful they must either be modified or eliminated altogether.

The ESA has met opposition from various groups and individuals across the United States. Opponents of the ESA feel that it has had a crippling effect on legitimate socioeconomic interests, disregarding individual liberties and property rights, and has been used as an anti-development tool often unrelated to the needs of imperiled wildlife. The perceived inflexible nature of the ESA, and its tendency to place the protection of species above all other considerations has disturbed many of these opponents. They particularly object that the economic burden of species conservation falling on those whose activities or property rights are restricted, while the benefits of protection accrue largely to society as a whole. Lastly, many have been angered by the preemption of local and state rights by the exercise of expanded federal authority to protect endangered wildlife (ibid). These themes also present themselves in Chapter Five.

Even advocates of species conservation have problems with the ESA. They believe the ESA has fallen short of its protection goals. Some even claim the act no longer serves as a serious safety net against extinction (ibid). Many advocates of the ESA believe the responsible government agencies—USFWS and the National Marine Fisheries Service—have been unduly influenced by political and economic interests. This study will look at the complexities of endangered species conservation, particularly the role of human values, by examining attitudes toward grizzly bear reintroduction.

The Rockies Prosperity Act

Another national law that may become cause of concern for stakeholders regarding grizzly bear reintroduction is The Rockies Prosperity Act (RPA), formerly known as the Northern Rockies Environmental Protection Act (Library of Congress 2005). This Act is the first legislation to attempt to frame wilderness protection in a bioregional context and contains an array of designations that would work in concert to effect ecosystem protection in the U.S. Northern Rockies. Some of the many goals of the Act are to designate certain National Forest System lands and Federal lands under the jurisdiction of the Bureau of Land Management in the States of Idaho, Montana, Oregon, Washington, and Wyoming as components of the National Wilderness Preservation System; and to establish a pilot system of National Wildland Restoration and Recovery Areas and a Wildlands Recovery Corps to help restore biological diversity and native species. A purpose of these designations is to protect water quality, watersheds, and wildlife habitat, including that of species listed as threatened or endangered under the

Endangered Species Act. If the RPA is passed by Congress it would have a great impact on the BE grizzly bear recovery efforts.

Animal/Society Interactions

An abundance of literature on the biology, conservation, and management of grizzly bears in North America has been generated from academia, government agencies, independent scientists, and conservation groups (Wilson 2003). This study provides a regional view of attitudes towards grizzly bears and their reintroduction to the BE from a specific social group. Traditional nature/culture dualisms have led to the creation of mutually exclusive spaces and places for wild animals (wilderness areas) and humans (cities and towns) (Wolch and Emel 1998). There still remain extensive areas that are inhabited by both animal and humans. This study examines such an area and investigates a case of struggle over sharing space which reveals how representations of both animals and people reflect the balance of power in these shared areas.

Wild and domestic, in wilderness or the countryside or the city, animals and humans share geographic environments—reciprocally constituting natural, social, and artifactual contexts (Lynn 1998 from Wolch and Emel 1998). Geography is a contextualizing tradition of scholarship: geographers commonly contextualize cultural and natural phenomena by emphasizing the interrelations between sites and situations, humans and nature, and values and social actions. All human activity occurs at sites embedded in situations, making geographical context a constitutive element of all natural processes (ibid). The BE and its surrounding areas represent a geographic community—multiple and overlapping communities of humans, domestic animals, and wild creatures.

This study examines human activities in and around the BE in regards to the prospect of having to share space with the grizzly bear. Unlike its human counterparts, the grizzly bear cannot organize and challenge the issue of grizzly bear reintroduction themselves. They must rely on humans to speak and act in their interests. The social dichotomy among the public created by the issue of reintroducing grizzly bears into the BE gives value to this phenomenon being studied in this particular area.

The discipline of geography and its allied social sciences boasts strong and long-standing traditions of inquiry into relationships between nature and society and the way natural resources and human cultural practices shape one another (Wolch and Emel 1998). Limited studies have been done in geography regarding animal/society relations involving a large predator that is known to kill humans. Gullo *et al.* (1997) studied the specific case of relations between humans and mountain lions during the 1980's and 1990's in California. Urbanization in California brought people into mountain lion habitat. This increase in urbanization led to the increase of human/mountain lion interactions. A small number of attacks stimulated intense public debate leading to political pressures to renegotiate human/mountain lion relationships and a revised social construction of the mountain lions character (ibid).

The debate over human-mountain lion relations pitted against each other interest groups with stakes in mountain lion status, including hunters and their adversaries, wildlife management officials, ecologists, environmentalists, and animal protection groups (ibid). Gullo *et al.* (1997) portray the technical difficulties of large predator management in animal/human borderlands but also suggest the potential for mutual learning and coexistence achieved through education and behavioral modification of both

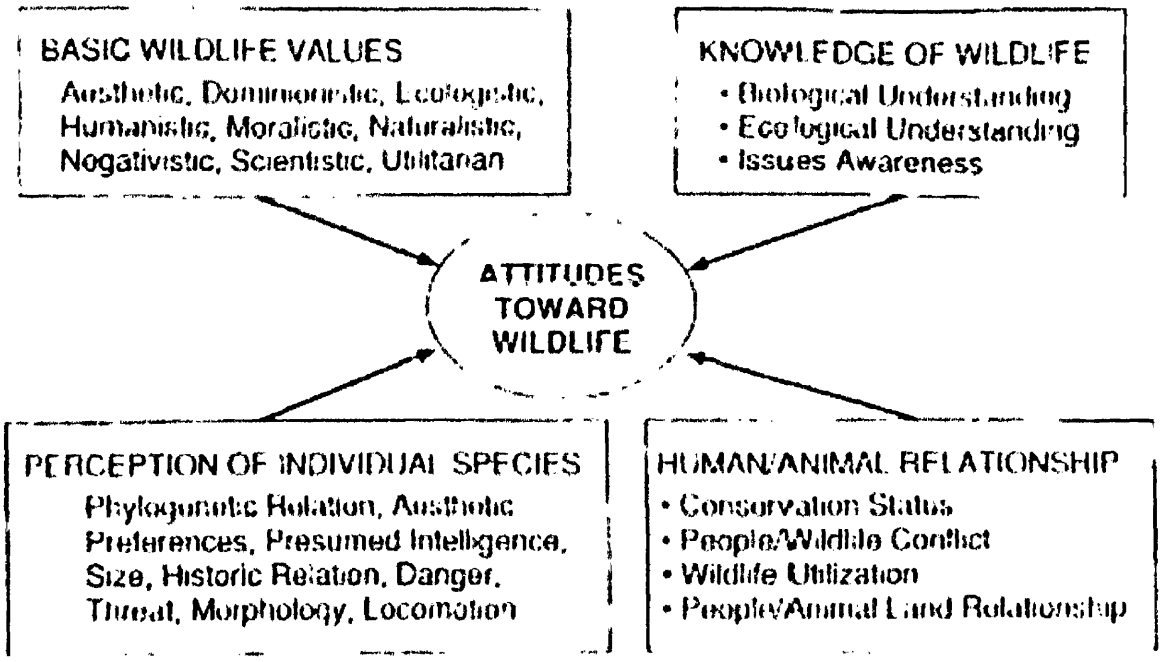
people and mountain lions. The social dilemma researched in this study provides a foundation for building an understanding of how humans and grizzly bears may be able to coexist in the BE and the issues that need to be examined in order to ease the transition into having grizzly bears in the BE.

Various factors influence the human attitude to wildlife component (Figure 1). Large predators tend to evoke much fear in some people. Transplanting predators into new areas produces an emotional response among humans that few other animals can generate. For example, Emel (1998) examined how dominant representations emphasizing the wolf's so-called savagery, lack of mercy, and unfair habit of pack hunting contributed to wolf eradication efforts in the late nineteenth and early twentieth centuries. The grizzly bear invokes similar emotions, such as fear and respect, among people across North America. Grizzly bears have killed humans, although historically they have done so only on rare occasions (Lipske 1991). This study will draw from Emel (1998) to examine how people's perceptions of grizzly bears affect their attitudes towards grizzly bears and their reintroduction.

Little qualitative research has been done on the topic of animal/society relations. Stephen Kellert has conducted broad scale research on science, policy, and management relating to the interaction of people to the natural environment. In his studies Kellert (1996) found that most human attitudes toward animals are a consequence of four major factors. First, people are disposed to view certain creatures in certain ways as a consequence of well established values of nature. Second, attitudes towards species are also shaped by creatures' particular physical and behavioral characteristics: its size, aesthetic appeal, intelligence, sentience, similarity to humans, cultural and historical

familiarity, body shape and means of locomotion. The third influence reflects people's knowledge of certain creature. The fourth element shaping attitudes toward animals derives from human/animal relationships. The interaction include economic and recreational uses, whether the species occurs on public or private lands, historical treatment of a species, as well as prevailing management practices toward certain species. This study will briefly look at individuals' knowledge of grizzly bears, but its primary focus will be on human/grizzly bear relationships.

Figure 1: Factors Affecting Attitudes Towards Wildlife
Source: The Value of Life: Biological Diversity and Human Society (Kellert 1996).



Kellert (1985) conducted a study on peoples' attitudes towards predators. In his study he found that animals responsible for causing property damage and implicated in possible human injury were particularly disliked. Additionally, predators were not a

generally well-liked group of animals, although this perception varied considerably among species.

Kellert (1993) also conducted a study of North Americans' attitudes towards bears and their conservation. His study found that generally North Americans have very positive views towards bears and their conservation. The rarity of bears, particularly the threatened status of grizzly bears, contributes to feelings of sympathy and support for this animal's conservation. More negative attitudes came from resource dependent groups such as livestock producers, loggers, and miners. These groups often viewed bears as a direct threat to their livelihoods. He also found that the capacity of bears to inflict human injury may additionally foster negative attitudes towards bears.

Among social demographic groups in his studies, predators were least liked by persons who were comparatively under-educated, farmers, non-Anglo-American, those of extremely low incomes, and respondents from the south. In contrast, Alaskans had the most positive attitudes toward predators. Lastly, he found that livestock producers dominantly fostered negative attitudes toward predators, and supported predator population reductions.

Frost (1985) conducted a similar regional study on grizzly bears in Montana. In her study she surveyed 159 households on the Flathead Indian Reservation in the Mission Valley of Montana to obtain the perceptions of the resident population regarding their co-inhabitants: the grizzly bear. The survey included inquiries about resident's knowledge of grizzly bear behavior and habitat needs, experience with grizzly bears, and attitudes toward grizzly bears and grizzly bear management issues. Overall, the resident population's general attitudes were favorable. Residents holding a favorable attitude

were likely to: have higher knowledge of grizzly bear behavior and habitat needs, have encountered grizzly bears, be younger, and be Native American (rather than Anglo-American) (ibid). Negative attitudes were associated with a loss of situational control, such as having a problem with a grizzly bear on personal property (ibid). The findings from Frost's and Kellert's work will help guide the formation my approach and provide important information to this study.

Chapter Summary

This chapter introduced the conceptual background on grizzly bear/society interactions. A historical background of grizzly bear extirpation from the North American West was illustrated. The historical background of grizzly bear reintroduction to the BE was also chronicled. I also reviewed the ESA, its obligations, and public responses to its policies. Lastly, literature pertaining to animal/society relations was detailed. I explained how I will use the findings from previous research and apply them to this study. Research of this kind has never been undertaken on a regional scale on the issues of grizzly bears and their reintroduction and will build upon a small but growing body of work on animal/society relations. The following chapter will address the qualitative methods that were employed in this research study.

CHAPTER THREE

METHODOLOGY, RESEARCH METHODS, AND DATA

In this chapter I discuss the reasons for and advantages of using qualitative research methods in this study. I also discuss the overall approach and rationale for the study and examine the theory and rationale of qualitative research. Third, I discuss the snowball sampling method employed in this study and present the advantages of its use in the data collection process. Lastly, I discuss the methods used in conducting the research and compiling the data.

Overall Approach and Rationale

The goal of this study was to develop an in-depth understanding of local ranchers' and outfitters' attitudes towards grizzly bear reintroduction into the BE. A quantitative study consisting of a large scale survey could have furnished insight about general attitudes towards reintroduction, but this study was designed to uncover attitudinal trends and develop a better understanding of the common language used by participants to describe their thoughts on grizzly bears and their reintroduction. Qualitative research attempts to identify and explain complex social structures within an identified study group. Qualitative observational interviews served these goals best. Qualitative research methods are used when the researcher is interested in phenomena relating to what people actually do in their day-to-day lives (Silverman 2005). Qualitative methods allow the researcher to explore the feelings, understandings, and knowledges of the study

participants through interviews, discussions and participant observation. Qualitative methodologies are increasingly used by geographers to explore some of the complexities of everyday life in order to gain a deeper insight into processes shaping our social worlds (Limb and Dwyer 2001). I adopted a qualitative approach because it is the best means of uncovering the concerns of the study participants regarding grizzly bears and grizzly bear reintroduction and the effects that these issues will have on their day-to-day lives. The data collected from the qualitative methods, namely interviews, provided the bulk of the original data for this thesis. I made several trips from Missoula down through the Bitterroot Valley and into Idaho to conduct the interviews personally. The primary research areas of Lemhi and Ravalli Counties were chosen due to their close proximity to Missoula.

Snowball Sampling Method and Respondent Participation

Individuals with land-based occupations were the study's populations of interest. A snowball sampling technique was used in order to reach these populations. With this approach, the researcher initially contacts a few potential respondents and then asks them whether they know of anybody with the same characteristics that the investigator is looking for in the research (Galloway 1997). In this study snowball sampling was advantageous because the primary focus of this research is not interested in working out what proportion of population gives a particular response but rather in obtaining an idea of the range of responses on ideas that a small, specific group of people have.

In this study a total of thirty-two individuals were interviewed. Names of outfitters who operate in the BE were obtained from The Montana Outfitters and Guides Association (MOGA), Fishing Outfitters Association of Montana (FOAM), and Idaho Outfitters and Guides Association (IOGA). Once potential participants were identified they were recruited via e-mail and asked if they would be willing to participate in the study. If a positive response was received from the e-mail, a phone call was made to set up a time and a place for the interview. No compensation was given for participating in an interview. Upon completion of the interview the interviewee was asked if he/she knew of anybody with land-based occupations that may be willing to participate in the study. These individuals were then contacted to find out if they would be willing to participate in the research. The name of the person who referred them was given if permission was granted to do so.

Two individuals refused to participate in the study. Reasons for non participation were lack of time for an interview and a bad experience in the past in participating in a different study. Two individuals agreed to participate but were not interviewed because the target of thirty participants was obtained. Two of the interviews were lost because of a tape recorder malfunction during the interview. These two interviews were discarded from the study, and two additional interviews were conducted to replace them. A total of eighty-five people were contacted about participation in the study. Of these eighty-five, thirty-two agreed and participated.

Data Gathering Methods

The bulk of the fieldwork consisted of interviews and field observations in the BE. The interviews were conducted from October through February 2004-2005. At the beginning of the interview process I introduced myself, stated my affiliation with the University of Montana's Department of Geography, and had the participant read and sign a written consent form that explained the study's purpose, the study's affiliation with the university, and their personal rights pertaining to the interview process. All interviews were conducted in person, at a locale selected by the participants. Seventeen interviews took place at the participants' personal residence; six occurred at the participants' place of business; six took place at a public location such as a coffee shop; and one occurred in the participant's motor vehicle in a public parking lot. The general setting of the interviews was very relaxed and comfortable. Most of the participants were eager to express their views on the subject. Many seemed to appreciate the fact that someone was doing a study of this kind and was interested in hearing their point of view on the subject. Interviews averaged approximately thirty-five minutes with the shortest interview lasting twenty minutes and the longest interview lasting in excess of two hours. All interviews were tape recorded with the informed consent of the respondent. As mentioned earlier, two of the thirty-two interviews were not recorded due to technical difficulties and were discarded from the study.

Interviews were conducted using open-ended questions from a semi-structured guide (Appendix B). When first asked, questions were read verbatim from the guide,

attempting to gauge respondents' initial reactions to the same question. The five main topic areas covered included:

- Personal background and attitudes toward the land
- General knowledge and attitudes towards bears
- Past experiences with grizzly bears
- Attitudes toward grizzly bear reintroduction
- Attitudes toward the government's involvement on the issue in the past

By conducting the interviews in person I was able to obtain a better grasp of the emotions expressed by the study participants that I would not have been able to obtain through a phone interview. Study participants were more willing to express themselves and elaborate on specific issues due to the fact that they were speaking to me in person. I was also able to conduct field research during the interview sessions. I was able to see the environments in which these people lived. I was able to see the landscape and gain a better understanding of why the participants feel a strong relationship with the land. I was able to see their homes, their livestock, their ranching and outfitting equipment, and meet their families and some of their clientele. The field observation provided better insight into exactly what their concerns are and why they have them. For example, a participant who is a rancher took me to his front yard and showed me claw marks on a tree made by a black bear. He told me that he does not like the fact that a black bear was this close to his home and that he did not want grizzly bears this close either. By conducting the field work I was able to develop an understanding of the respondents' life

circumstances and how these circumstances shape their attitudes toward grizzly bears and the reintroduction.

Data Analysis Procedures

The taped interviews were transcribed by hand. Once the major task of transcribing interviews was complete, the interviews were coded using standard coding methods (Carney, Joiner, and Tragou 1997). The transcribed interviews served as the primary data source. Qualitative hypotheses and theories emerge from the data set while the data collection is in progress and after data analysis has started (Morse & Field 1995). Once the interviews were transcribed specific themes were identified and separated into different categories based on these themes. The interview data was continually examined for descriptions, patterns, and relationships between categories. These relationships are not statistical, but descriptive. The themes were grouped into the following categories regarding grizzly bears and reintroduction:

- Positive and/or negative attitudes toward grizzly bears
- Business and recreational concerns regarding being able to access state and federal lands due to the presence of grizzly bears
- Safety concerns for their personal property, their personal safety, and the safety of their families
- Concerns regarding habitat suitability of the BE for grizzly bears
- Economic impacts from having grizzly bears reintroduced
- Past experiences with the wolf reintroduction of 1995

- ❖ Distrust and hostility toward the government and outside influences regarding reintroduction
- ❖ Opposed to or supportive of grizzly bear reintroduction

With these groupings I was able to organize and better identify specific tendencies respondents had towards grizzly bears and reintroduction. The organized coding of the data made the qualitative research data analysis much easier.

Chapter Summary

This chapter introduced the methodology used to conduct this study. I explained that in order to identify and explain the complex social structures regarding grizzly bears and their reintroduction among ranchers and outfitters that qualitative research methods would work best. I also described the sampling method employed in this study and outlined how the study participants were located and contacted. Lastly, the data gathering methods and data analysis procedures used in this study were also introduced. I described the settings of the interviews and described the advantages of performing the research on-site and in person. Chapter Four describes the research setting of the BE and the importance of the ranching and outfitting industries in the local and state economies in Idaho and Montana. The chapter will discuss how the social groups of ranchers and outfitters engage in the BE. The chapter will lay the foundation as to how grizzly bear reintroduction may affect these two social groups socially and personally.

CHAPTER FOUR

THE BITTERROOT ECOSYSTEM

This chapter describes the research setting of the BE as defined by the USFWS. The physical landscape of the BE and its surrounding area will be described. I also detail the socioeconomic status of Lemhi County, Idaho and Ravalli County, Montana. This chapter will also break down the important contributions that the ranching and outfitting industries make to their respected states and to their local communities. Statistics are presented that show the economic impacts that the ranching and outfitting industries have on their communities. Increased population and the continued use of the land for ranching and outfitting activities will continue to add human pressures on the progress of the grizzly bear reintroduction program. Population growth and development in the area could encroach on grizzly bear habitat and also increase the likelihood of human/grizzly bear contact and conflict.

The Bitterroot Ecosystem Reintroduction Area

The BE (Figure 2) is located primarily in central Idaho with a small portion located in western Montana. The ecosystem is contained in parts of the Bitterroot, Lolo, Nez Pierce, Boise, Challis, Payette, Clearwater, and Salmon National Forests. Most of the area is the Selway-Bitterroot and Frank Church/River-of-No-Return Wilderness areas. The Selway-Bitterroot Wilderness area is 2,094 square miles. The Frank Church/River-of-No-Return Wilderness, which borders the Selway-Bitterroot to the south, is 3,698

square miles. The entire ecosystem extends approximately 300 miles north to south. This area is the biggest unbroken piece of roadless land in the lower forty-eight states (McNamee 1992). This area of land will not have the same amount of human pressures as the NCDE, which contains Glacier National Park or the YE, which contains the highly visited Yellowstone National Park. The area could also act as a linkage area for grizzlies to move freely from the NCDE and SCYE to the north and the YE to the south.

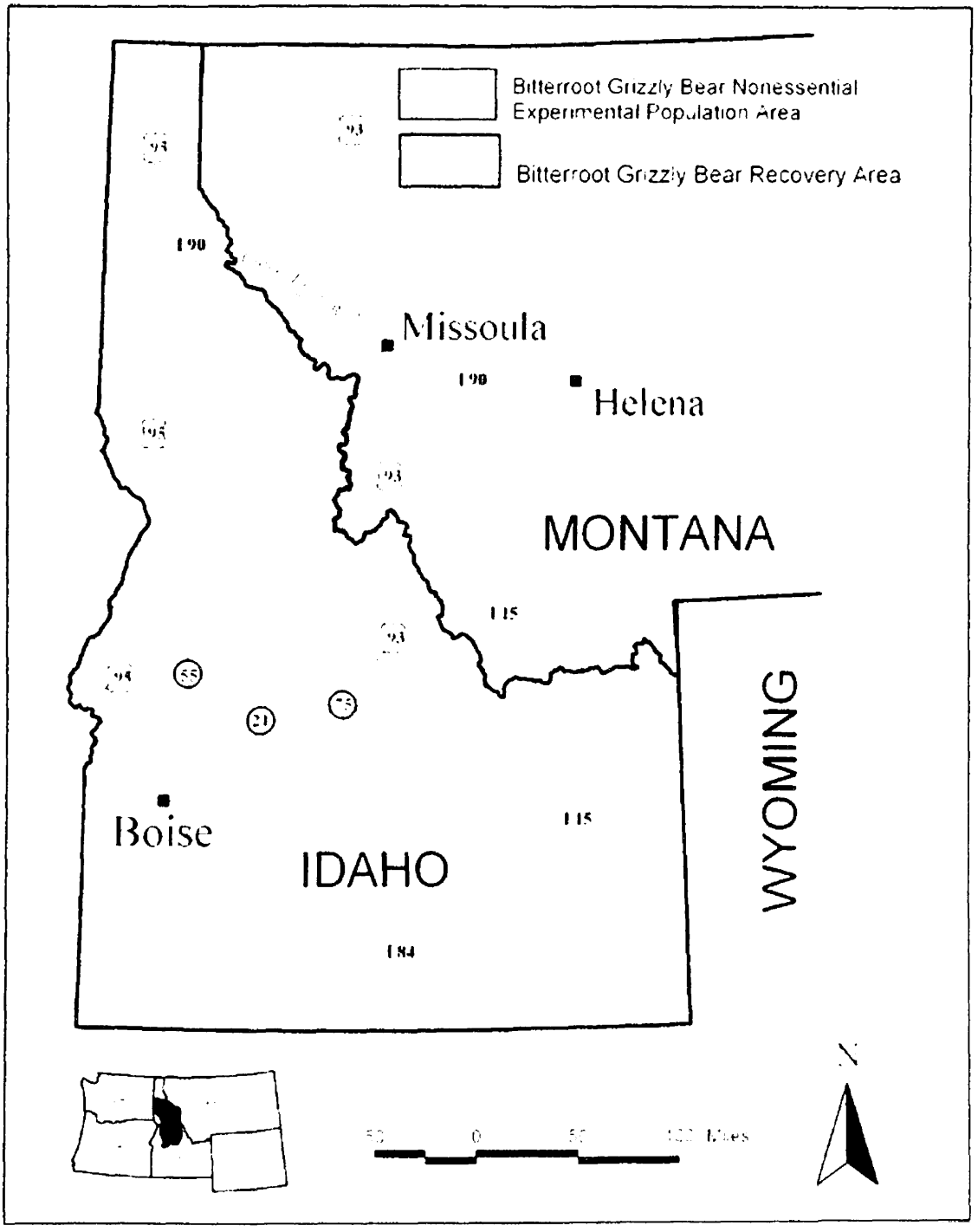
The BE is one of the largest contiguous blocks of federal land remaining in the lower forty-eight United States. The core of the ecosystem contains two wilderness areas which comprise the largest block of wilderness habitat in the Rocky Mountains south of Canada. According to the USFWS, of all remaining unoccupied grizzly bear habitat in the lower 48 States, this area in the Bitterroot Mountains has the best potential for grizzly bear recovery, primarily due to the large wilderness areas. As such, the BE offers excellent potential to support a healthy population of grizzly bears and to boost long-term survival and recovery prospects for this species in the contiguous United States.

This ecosystem has several features that make it unique. The BE contains three major mountain ranges; the Salmon River Mountains, the Clearwater Mountains and the Bitterroot Mountains. The area is mostly characterized by rugged terrain with steep slopes. The average elevation is between 4,000 to 5,000 feet. Elevations range from 1,500 feet along the Clearwater River to 12,622 feet atop Borah Peak in the southeastern portion of the BE.

The Salmon and Clearwater Rivers are the two major waterways that run within the BE. Both rivers flow into the Snake River along the Idaho/Washington border. The Snake River eventually drains into the Columbia River in Washington. The waterways in

the BE provide over nineteen million acre feet of water to the Columbia River system annually (USFWS 2001).

Figure 2: Bitterroot Ecosystem Recovery Area
Source: http://mountain-prairie.fws.gov/bitterroot/finalrule.htm



The mountains of the BE are covered by three major vegetation community types. The grand fir/Douglas-fir, Engelmann spruce, sub-alpine fir habitat type is the most common, and occurs throughout central Idaho (Idaho Department of Parks and Recreation (IDPR 1989). The western red cedar-western hemlock type is more frequent in the northern portions of the area, and the ponderosa pine type exists throughout the BE (USFWS 2001).

Approximately four hundred species of mammals, birds, amphibians, and reptiles inhabit the BE (ibid). Major big game species in the BE include elk, deer, bighorn sheep, mountain goats and black bears. Carnivores such as wolves, coyotes, bobcats, mountain lions, lynx, wolverines, martens, fishers, and river otters also exist. The Idaho Department of Fish and Game (IDFG) also receive infrequent reports of grizzly bears in the state but no reports have been confirmed since 1932. Presently both state and federal wildlife agencies contend that the BE does not support a grizzly bear population.

Grizzly bear foods available in the BE include berries, deer, moose, elk, and fish (McNamee 1991). Hogg *et al.* (1999) found several berry producing shrubs in the BE that can serve as foods in a grizzly bear's diet. These berries include huckleberries, serviceberries, cherries, elderberries, buffaloberries, and mountain ash. Concerns were raised regarding the absence of anadromous fish stocks and the decline of the whitebark pine (*Pinus albicaulis*), both important grizzly bear food sources. Brostrom (1996) indicated that other fish species such as cutthroat trout and kokanee salmon could help supplement diets of grizzly bears. The availability and abundance of anadromous fish and whitebark pine will be further discussed in chapter five.

A team of biologists analyzed LANDSAT satellite imagery and created a highly detailed computerized map of the natural attributes of the ecosystem USFWS (2000). These attributes were then used to access the availability of basic grizzly bear needs such as space, isolation, food, den sites, cover, safety, and the absence of human related attractants. These biologists estimated that the habitat in the BE could support 200 to 400 grizzly bears (McNamee 1991).

The BE also contains several outlets for outdoor recreation. The national forests that are contained at least in part in the BE have over 14,000 miles of trails that are used for various activities that include hiking, biking, motorcycling, horseback riding, nature study, backpacking and four-wheeling (USFWS 2001). All of these activities are expected to have high to moderate growth to the year 2010 (IDPR 1989). A 1994 survey conducted by IDPR indicated increasing demand by user groups for both single and multiple-use trails. Trails exist on wilderness and non-wilderness areas. Recreation in the BE will be further discussed in the Montana and Idaho Outfitting Industry section in this chapter.

Socioeconomic Status in the Lemhi and Ravalli Counties

Lemhi and Ravalli Counties are basically rural areas. The counties include several small towns: Hamilton, Sula, Stephensville, Corvallis, Victor and Darby in Ravalli County, Montana and Salmon and Leadore in Lemhi County, Idaho. From the 2000 U.S. Census the population of Ravalli County, as of 2000, is 36,070 and the population of Lemhi County is 7,806. The population density for this area is

approximately seven persons per square mile. The relatively sparse population in these areas can be attributed in large part to two factors: the ruggedness and inaccessibility of much of the land in the area and the large percentage of public lands that is managed by federal or state agencies (USFWS 2001). Ninety-two percent of Lemhi County is state or federal land. The population in these areas remained essentially static from 1950 through 1970, but experienced a forty-five percent increase between 1970 and 1980. The populations of these two counties continued to grow between 1990 and 2000. Most of the growth occurred in Ravalli County with a population increase of forty-four percent. In the 1990s, Ravalli County was the fastest growing county in Montana and one of the fastest growing counties in the United States (Swanson 2001). Lemhi County experienced a population increase of thirteen percent from 1990 to 2000. Populations are predicted to continue to increase in Ravalli County, while a slight decrease is predicted for Lemhi County.

The influx of people changes the natural and social landscapes as development springs up across the land. In Ravalli County over 12,700 acres have been subdivided in the past 10 years (Usada 1998). As this urban sprawl continues, agriculture that was once a leading local economy will lose ground because the place has become too expensive to make a living by farming or ranching (ibid). With development concerns also comes preservation of nature concerns. Activists against further development argue that what is best for nature and wildlife is not always best for human interests. This holds true for grizzly bear reintroduction into the BE. Residents wonder if coexistence between grizzly bears and humans is even possible or needed (ibid).

People are attracted to the Lemhi and Ravalli County areas because they present a pristine landscape and a high quality of life and not necessarily because of excellent economic opportunities (Usuda 1998). In 2001, the per capita personal income in Lemhi County was $21,283 (Idaho Department of Commerce 2002). Per capita income in Ravalli County is relatively low and has been for quite sometime (Swanson 2001). The 1999 per capita personal income for Ravalli County was $17,935 (United States Department of Commerce 2005). These per capita income statistics indicate that on average people in Lemhi and Ravalli County make less than the national average of $29,469 (2000).

The historical economies in these areas have been based primarily on ranching and natural resource industries such as logging, lumber manufacturing, mining, and recreation. The trend since 1967 has been a gradual decline in the importance of ranching and mining related employment and corresponding increases in the importance of all other categories. Government is a leading employment category for the area (USFWS 2000).

The socioeconomic status of Ravalli and Lemhi Counties raise intriguing issues when it comes to grizzly bears. The counties' increasing populations and development present concerns if there is enough space for grizzly bears and humans to happily coexist in the BE. Having grizzly bears in the area may also add another financial burden to individuals with land-based occupations. The ranching and outfitting industries will be further discussed in the next section since these industries are the primary focus of this study.

The Montana and Idaho Ranching Industry

This research was conducted in western Montana and east central Idaho. Twenty-six of the research participants resided in Ravalli County, Montana or Lemhi County, Idaho both of which border the BE reintroduction area. Ranchers in these areas have long standing connections to the land. The ranching lifestyle has been central to Montana and Idaho's histories. Livestock production in Montana is a one billion dollar industry (Swensson and Knight 1998). Families that ranch and farm are responsible for the stewardship of the vast majority of the states' open spaces and natural beauty. Ranching is a driving force in Bitterroot culture, helping to define the ethic of neighborliness and sense of community. As of 2002 there were 1,441 farms in Ravalli County comprising over 245,000 acres (Montana Agriculture Statistics Service 2002). Over the past twenty-five years the number of farms in Ravalli County has increased but the amount of land within the county held and managed falling from nearly 273,000 acres in 1982 to 245,133 acres in 2003 (ibid). In Lemhi County, as of 2002, there are 3,083 farms comprising over 173,000 acres of land (Idaho Agriculture Statistics Service 2002).

Ranchers contribute many benefits to wildlife. Ranchers consider wildlife in all of their management decisions (Swensson and Knight 1998). They space the wires on fences to minimize disruption to wildlife. Wildlife biologists have found that the removal of coarse older grass stimulates the production of young grass and forbs, which are better for wildlife (ibid). Most importantly ranchers provide habitat for wildlife.

Much of the critical winter wildlife habitat is on deeded lands, along with some of the most important year-round habitat. Without the contributions of private lands,

wildlife numbers would be much lower. If the land presently being used for ranching was used for subdivisions, factories or cities, the wildlife habitat lost would be disastrous (ibid). Ranchers who make their living caring for the land do more for our wildlife resource than any other group of people in Montana (ibid).

Montana and Idaho Outfitting Industry

Outfitters also have long standing connections to the land in this area. Preliminary results of a 2001 survey by the U.S. Fish and Wildlife Service reveals a seven percent drop in hunting participants nationwide. However since 1996, Montana's hunting participation rate has grown by eighteen percent. The study indicates that more than 229,000 Montanans were in the field hunting in 2001, as compared with 194,000 hunters in 1996 (USFWS 2001). Montana also has the highest hunter participation rate (twenty-four percent) of any state in the nation, followed by North Dakota with nineteen percent and Wyoming with seventeen percent.

In 2001, more than eighty-two million Americans engaged in wildlife-related recreation, spending more than $110,000 billion and accounting for 1.1 percent of the gross domestic product, a considerable contribution to the U.S. economy. These figures underscore the role and importance hunting and other wildlife-related recreation play in the socioeconomic fabric of Montana and Idaho. Appendices C and D show the complete results for the USFWS's *2001 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation in Idaho and Montana.*

A study by the University of Idaho (Liedner and Krumpe 1995) found that the average outfitter has been operating in Idaho for thirteen years and that the total gross revenue attributed to outfitting and guiding activities in Idaho is in excess of $22 million. Outfitting represents on average approximately sixty-seven percent of a proprietors income. Many outfitters work other jobs to make ends meet. This study found that the typical Idaho outfitter nets ten percent of their gross revenue (ibid). Outfitters in Idaho incurred eighty-one percent of their total expenditures to run their businesses in Idaho (ibid). Outfitters incur in excess of $5.6 million in expenses in Idaho (ibid). The combined average revenue generated by outfitted pack trips and trail rides is $984,995 (ibid). Lemhi County generated additional earnings of $528,000 from outfitting-related expenditures. In Ravalli County, non-residents spent $2,777,000 on outfitting services and an additional $251,000 in fees and licenses in 2003 (Montana Institute for Tourism and Recreation Research [ITRR] 2004).

The 2001 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation for Idaho revealed that 868,000 Idaho residents and non-residents sixteen years old or older fished, hunted or wildlife watched in Idaho. Also, state residents and non-residents spent $982 million on wildlife recreation in Idaho. Of that total, trip-related expenditures were $296 million, and equipment purchases totaled $552 million. The remaining $134 million was spent in licenses, contributions, land ownership and leasing, and other items and services (USFWS 2001). Lemhi ($528,600), Custer ($305,491), and Idaho ($490,782) counties, which contain the bulk of the grizzly bear reintroduction area, generated an additional $1,324,873 in all sectors of the local economies from outfitter-related activities in 1993 (Liedner and Krumpe 1995).

The same survey revealed that 871,000 residents and non-residents 16 years and older hunted, fished, or watched wildlife in Montana. In 2001, state residents and non-residents spent $943 million on wildlife recreation in Montana. Of that total, trip related expenditures were $463 million, and equipment purchases totaled $387 million. The remaining $93 million was spent on licenses, contributions, land ownership and leasing, and other items and services (USFWS 2001). A 2003 study found that outfitting/guide services attributed to $67,400,000 (Figure 3) in total expenditures by non-resident visitors to Montana. Four percent (Figure 4) of Montana's total expenditures by nonresident visitors can be directly attributed to guiding and outfitting (ITRR 2003).

Although the outfitting and guiding industry is not the largest economic sector in Idaho or Montana, it plays a significant role in many rural communities and counties. Outfitting is classified as an export-based industry in Montana and Idaho. This means that they are responsible for money inflows into local economies. This inflow of money causes additional activity within the local economy (Liedner and Krumpe 1995).

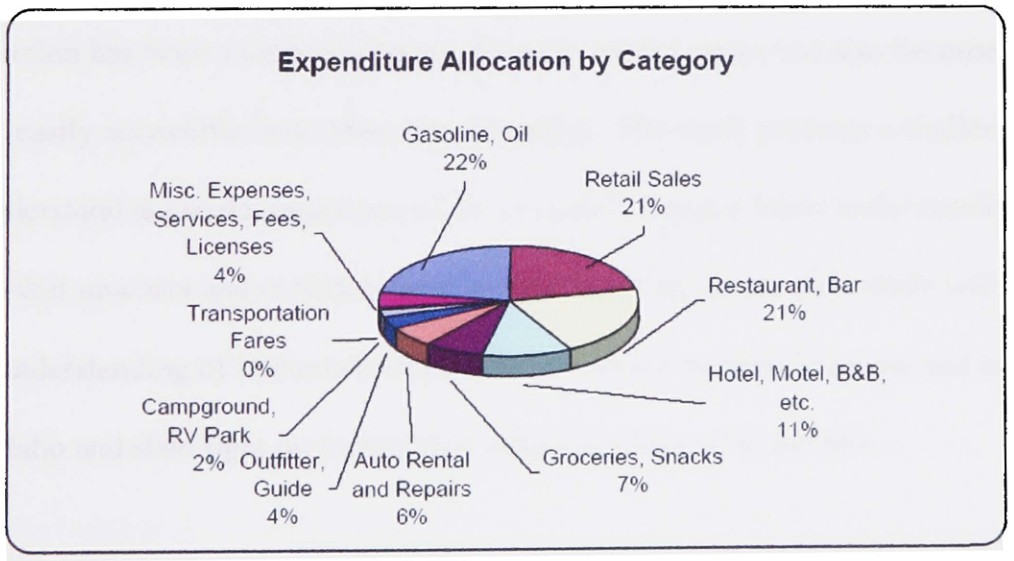
Figure 3 2003 Tourism Expenditures in Montana
Source: *2003 Montana Nonresident Economic Impacts and Expenditures* (ITRR) 2003.

Expenditure Category	Average Daily per Group[1] (group size= 2.32)	Allocation by Category	Total Expenditures
Gasoline, Oil	$26.12	22%	$421,700,000
Retail Sales	$24.71	21%	$398,900,000
Restaurant, Bar	$23.93	21%	$386,300,000
Hotel, Motel, B&B, etc.	$13.08	11%	$211,200,000
Groceries, Snacks	$8.60	7%	$138,800,000
Auto Rental and Repairs	$7.21	6%	$116,400,000
Outfitter, Guide	$4.18	4%	$67,400,000
Campground, RV Park	$2.53	2%	$40,900,000
Transportation Fares	$0.54	0%	$8,700,000
Misc. Expenses, Services, Fees, Licenses	$5.21	4%	$84,000,000
Total Average Daily per Group	**$116.11**	100%	**$1,874,300,000**

[1] Reflects average expenditure distribution over all visitor groups, regardless of how many actual groups spent money in any particular category.

Note: Numbers may not add to 100% due to rounding

Figure 4 2003 Direct Expenditures by Category
Source: *2003 Montana Nonresident Economic Impacts and Expenditures* (ITRR 2003).



Chapter Summary

The populations in Ravalli County and Lemhi County have grown considerably over the past thirty-five years. Ravalli County's population is expected to continue to grow and it is one of the fastest growing counties in the United States. This continued growth could add more human-pressures to the placement of grizzly bears into the BE and could also affect the viability of a grizzly bear reintroduction. If populations continue to increase human development may encroach on grizzly bear habitat and the likelihood of human/grizzly bear contact will also increase. Also, the economic contributions of the ranching and outfitting industries to the area can not be underscored. Their importance to the economies, to their local communities and to their states reveals that they should have strong and significant roles regarding policies concerning grizzly bear reintroduction. This research was conducted in the BE because grizzly bear reintroduction has been a topic of concern for over twenty-years and also because the area was easily accessible from Missoula, Montana. The study presents a challenge to better understand the social landscape of the area and to gain a better understanding of concerns that ranchers and outfitters have in their everyday lives. This study will provide a better understanding of humans/animals relations in the western Montana and east central Idaho and shed light on factors that influence these relationships.

CHAPTER FIVE

STUDY RESULTS

This chapter analyzes the findings from this study. It begins by giving a description of the backgrounds of the respondents that participated in the study. In the remaining part of the chapter, analysis of the results will be explained in-depth. This chapter examines the attitudes that the study participants have towards grizzly bears and grizzly bear reintroduction and provides insight to the validity of these concerns and to factors that influence these attitudes.

Respondents Background

Thirty respondents were interviewed for this study. Eight were residents of Idaho, and the remaining twenty-two resided in Montana. All Idaho participants resided in Lemhi County with six living in the town of Salmon and the remaining two living in North Fork. Of the Montana participants eighteen lived within Ravalli County, three lived in Missoula, and one lived just outside of Butte. Only one of the thirty respondents was female. She was an Idaho rancher. An attempt was made to obtain a balance between men and women respondents, however this was a challenge due to the fact that ranching and outfitting are largely male-dominated fields. All participants conducted all or some of their business activities in Ravalli and/or Lemhi Counties and within the BE.

Eighteen participants made at least part of their living in the outfitting/guiding industry. Six are based out of Idaho with the remaining twelve being based out of

Montana. Fifteen were proprietors of their own outfitting businesses, and three were contracted guides. Several outfitters offered multiple services such as fishing, horseback rides, raft trips, big game hunts, wolf tours, mountain biking, guest ranches, hiking, bird hunts, and overnight camping. Table 3 shows the breakdown of individual services offered by the participants.

Table 3 Outfitter/Guide Offered Services

Service	Number of Outfitters/Guides Offering Services
Hiking	4
Horseback Rides	8
Big Game Hunts (elk, deer, black bear, mountain lion)	9
Bird Hunts (chukar)	5
Raft Trips	8
Fishing	12
Mountain Biking	2
Guest Lodge Services	8
Wolf Viewing	1
Overnight Camp Trips	15

The average age for the outfitters/guide respondents was forty-three years old. The youngest was thirty-two years of age, and the oldest was sixty years of age. The number of years living and/or working in the area ranged from three to sixty years. The average number of years living in the area by the respondents averaged twenty years.

Eleven respondents made their living in the ranching industry. Nine of the ranchers live in Ravalli County and two live in Lemhi County. The average age of the ranchers is fifty-eight years old. The age range for the ranchers was forty-nine to seventy years old. The number of years living in the area ranged from seven to seventy years.

The average number of years living in the area was thirty-seven and a half years. Six ranchers were part of multiple generations that have been in the ranching industry.

One respondent currently works in Missoula as a car salesman but had worked in the logging industry in the study area for the past seven years. He currently lives in Ravalli County. An attempt was made to recruit more participants from the logging industry, but recruitment was problematic because of a limited number of contacts and the inability to get in contact with those individuals.

Fourteen participants migrated to Idaho or Montana from elsewhere. Sixteen were born and raised in Idaho or Montana. One participant currently makes his living in both ranching and outfitting. Several participants had a background in multiple land-based industries. Many of the respondents also had past experiences as outfitters, guides, loggers, and ranchers. Eleven participants revealed they were college graduates even though no questions regarding educational background were asked. Four had degrees in wildlife biology and had worked in the past for a government agency managing wildlife in the past.

Attitudes Towards Grizzly Bears

In order to look at the respondents' attitudes toward grizzly bears, their thoughts about and past experiences with grizzly bears were examined. When asked the question, "Do you like bears?," twenty-three responded positively, three gave responses that were interpreted as indifferent, three expressed a specific dislike towards grizzlies and a like of black bears, and one said that it depended on what the bear was doing. The latter

respondent stated he did not have a dislike for bears, but he was not in favor of the reintroduction.

Of the twenty-three positive responses, seven came from ranchers and sixteen came from outfitters/guides. Two Idaho ranchers interviewed expressed that they like bears. Sixteen of the positive respondents expressed that they or someone they knew had had previous problems with grizzly bears. Six of the respondents had lived and worked in Alaska for a period of time and had many encounters with grizzly bears. Table 4 shows the different problems with grizzly bears expressed by all the respondents. Examples of positive attitudes towards grizzly bears include the following:

> Personal preference, I like them. I like to see them. It's a true symbol of the wilderness of the West. If you ask that question to an individual who just purchased 50 or 60 acres from California, they're going to tell you just the opposite. Oh my God no, they are going to eat my children!
>
> I like seeing them. I like having them around. I worked in the Bob [Marshall Wilderness Area] for a number of years and grizzlies are a part of that habitat. I like having high-end predators in the mountains.
>
> In absence of political attachments, it would be a benefit to the ecosystem and the people of Idaho to have grizzlies back in Idaho, but I say that very cautiously.

These statements reflect that many of the participants respect and enjoy grizzly bears and wildlife in general. Many believe grizzly bears play a positive role in the "mystique" of the West and the western ecosystem and enjoy having them in the wilderness. They do not necessarily believe, however, that it is a good idea to put grizzly bears in the BE. They hold the view that because of increasing human pressures on the BE, the area is not an ideal place for grizzly bears. In this study, positive attitudes

towards bears do not influence positive attitudes towards grizzly bear reintroduction to the BE.

Table 4 Respondents' Problems with Grizzly Bears

Type of Problem	**Number of Respondents with Problem**	**Location of the Problem (If Given)**
Hunting/Fishing Camp Disturbance	8 (*4)	The Yukon, Canada (2) Alaska (6) Yellowstone Area (1)
Livestock Depredation	2	Near The Bob Marshall Wilderness (2)
Minor Encounters	8 (*5)	The Bob Marshall Wilderness (1)
Feed/Grain/Apple Tree Disturbance	3 (1*)	The Bob Marshall Wilderness (2) The Mission Mountains (1)
Reroute Trip Because of Grizzly Bears in Area	2 (*1)	Alaska (2)
Raft Boat Disturbance	2 (*1)	Alaska (2)
Grizzly Bear Attack *experienced personally	4 (*1)	Alaska (2), Montana (1)

The three indifferent responses came from a Montana hunting/fishing outfitter, an Idaho rafting outfitter, and a Montana rancher. They all expressed that grizzly bears have their place in the western ecology, and that they enjoy seeing them in the wild. All three knew people who had past problems with grizzly bears. One knew an outfitter who had a client that was mauled by a grizzly bear, and another knew a person who was mauled and killed by a grizzly bear

Two of the three negative responses came from the two oldest participants in the study. They were both life-long Bitterroot ranchers. The age of these respondents partially supports Frost's findings that younger individuals have more positive attitudes than older individuals. The third negative response came from the participant who had

worked most recently in the logging industry. Two of the respondents expressed that they like black bears but dislike grizzly bears. None of the three had had any major problems or past experiences with grizzly bears.

A seventy year old life-long rancher in Ravalli County said the following:

> These little black bears never bothered anybody. I can't say that about grizzlies because I don't know nothing about them really. I don't think [black bears] fight with people. That's what I got against grizzlies. You don't let your kids go up the creek here with a fishing pole and his sleeping bag and spend the night if there's grizzlies up there.

A forty-two year old outfitter expressed this opinion:

> You got a chance of getting mauled. Any bears that are in close proximity to residents are going to start losing their fear of man. When they figure out there's a food supply you've got even more of a problem. With grizzly bears, they are a problem we don't have to deal with right now, and I prefer it stay that way.

As these two quotations suggest, perceptions of potentially having negative experiences with grizzly bears appear to have an influence on whether the respondents have positive or negative attitudes towards grizzly bears or bears in general.

Affect on Access and Recreation

Idaho and Montana provide a diversity of high quality outdoor recreation resources enjoyed by both residents and non-residents (USFWS 2000). In Idaho nature study, hiking, walking, camping activities are all projected to experience high growth to the year 2010 (IDPR1989). Restrictive use of federal lands due to reintroduced grizzly bears is a major concern among many respondents in this study. Their livelihoods are dependent

on access to these lands. They and their families also recreate on these lands and have been recreating there for many years. They do not want their ability to access and recreate on these lands to be taken away. A few also expressed that special interest groups are using grizzly bear reintroduction as a means to satisfy anti-hunting and no human access agendas for the wilderness areas.

The Idaho Forest, Wildlife, and Range Policy Analysis Group[6] published a report regarding land-use restrictions and land managements policies due to recovered grizzly bears in Idaho. The report said the following:

> The presence of species listed under the ESA complicates federal land management and can also affect state and private lands. Timber harvesting, livestock grazing, hunting, off-road vehicle use, hiking, horseback riding, minerals prospecting, and other activities continue to occur in grizzly bear habitat in Idaho, but levels of these activities are probably lower than if grizzlies were not present or not managed under the mandates of the ESA. The major management concern in grizzly bear habitat on federal lands is providing grizzlies with secure habitat in order to minimize displacement of bears to other areas and to reduce human-caused mortality. This is accomplished by restricting motorized access and scheduling activities so they take place when grizzlies are hibernating or not using a particular area. Limiting grizzly bear access to human foods and garbage is another management technique. Motorized access has been reduced in certain places or at certain times to protect grizzlies. The ESA requires interagency consultation between the U.S. Forest Service and the USFWS on planned activities, which to date has modified how and when these activities may occur in grizzly habitat (MaCraken et al 1994 pg. 3).

Grizzly bears require large, undisturbed areas to survive. A home range for a mature grizzly can cover hundreds, and sometimes thousands, of square kilometers. Humans are encroaching on these contiguous tracts of land with rural and urban development, wilderness recreation, and with expanding road networks and logging development. Grizzly bear management practices in Glacier and Yellowstone National Parks are

[6] The University of Idaho College of Natural Resources Policy Analysis Group was established by the Idaho Legislature in 1989 to provide objective analysis of the impacts of natural resource proposals.

designed to reduce the likelihood of bear-human encounters in the backcountry. If grizzly bears are known to be frequenting certain areas and/or have had human contact the National Park Service will likely close off the area to human access for temporary periods of time.

Montana and Idaho provide numerous outdoor recreational opportunities. In Idaho about fifteen percent of the recreation visitor days (RVDs) are associated with developed areas while about eighty-five percent of the RVDs are associated with non-developed and wilderness settings (USFWS 2000). In 1992, 10,000 people floated the Main and Middle Forks of the Salmon River through central Idaho wilderness areas. United States Forest Service personnel met 21,230 visitors in the Frank Church Wilderness. Recreational use of the Frank Church Wilderness has increased rapidly in recent years. RDV's are also expected to grow annually within the Montana portions of the BE (ibid). These statistics show that large amounts of people currently recreate in the reintroduction area.

Mattson (1990) explains that if grizzly bears are restricted to ranges smaller than 20,000 km^2, as is the case in the BE, extensive restrictions on access or widespread modification on human behavior will likely be required if bears are to survive. Almost all of the respondents said they spend a great deal of time outdoors in the Selway-Bitterroot and Frank Church Wilderness areas primarily recreating in their free time away from work. Activities include hiking, fishing, horseback riding, kayaking, and hunting among others. One half of the respondents expressed the fear that if grizzly bears are reintroduced it would restrict their access to the wilderness areas. Aware of grizzly bear management practices in Glacier and Yellowstone, these respondents expressed the concerns that similar restrictions will be implemented in the BE:

> As soon as they put a grizzly bear in there, they are going to put up the sign and gate the roads, and say this area is closed and you can't go in here.
>
> [Grizzly bears] will be too close to people, and there will be too many people up and down these trails and in these mountains. With a couple of encounters they'll have to take care of it. Any encounters are just going to restrict areas. It would limit outdoor activity by human beings.
>
> Grizzly bear management is essentially the management of human beings. Grizzly bear management requires that human beings be kept out of areas where there's a threat of grizzlies.
>
> [National Park Service] did not want any human/ bear encounters. If you look at what happens in Yellowstone and Glacier, if there's a sow and a couple of cubs they'll simply say no hikers, no nothing through those areas. You're not allowed in those areas. If they put them [in the BE] they'll say, 'you can't go hiking there or you can't go fishing.' If you can tell me I can have three hundred sixty-five twenty-four seven access then I can say I am all right with your program.

Most of the BE land is in federal land jurisdiction. Outfitters have leases on federal land and buy licenses in order to conduct outfitting activities on federal land. Ranchers' livestock graze and roam on federal land that they lease from the government. The IGBC guidelines include some specific direction regarding the steps that must be taken prior to relocating and/or removing grizzly bears that conflict with livestock. One of these guidelines states, "Livestock use does not occur in habitat components critically important to grizzlies in time or space" (IGBC 1986, 53-54). The reintroduction of grizzly bears and the management practices that come along with them may restrict land use for outfitters and ranchers.

Along with fear from restrictive land use, seven respondents felt that grizzly bear reintroduction is used by conservation groups to put an end to hunting. Two respondents expressed that reintroduction is being used to prevent human access to the Selway-

Bitterroot and Frank Church Wildernesses altogether. The following statements express the anti-hunting concerns:

> To tell me I can't go in. A lot of it had to do with anti-hunting organizations. [The biologist] said they need another predator back there, and I said 'Yeah, man is another predator.' To tell me they need more predators is telling me they are trying to phase man out of the cycle of it.
>
> I think the wolves were brought in as a way to get rid of the hunter because if you kill off the huntable surplus of animals every year with predators it's kind of a slick way of all those anti-hunting groups to get rid of us.
>
> It's a huge movement. It's based on doing away with hunting. We've got plenty of wolves in Minnesota, and we didn't need them here. I think they will have a devastating effect on the hunting privileges.
>
> There was a World Heritage Bill a few years ago that wanted to create a corridor with the Frank [Church Wilderness] and the Selway [-Bitterroot Wilderness] between Glacier and Yellowstone. The Frank and the Selway would become World Heritage Sites and no human zones. This would essentially condemn Lemhi County. The bear and the wolf are ways of accomplishing this.

Participants in this study expressed the concern that their access to federal and state lands may be limited if grizzly bears are brought into the BE. Studies have shown that large numbers of people recreate in and around the BE area and these numbers are expected to increase. Some participants in this study rely on access to the BE in order to perform their business activities. Almost all of the participants spend time recreating in the BE. If grizzly bears are reintroduced to the BE the USFWS may have to implement bear management policies that restrict human access to the bear recovery area.

The Threat of the Grizzly Bear

The expressed willingness to kill a grizzly bear when a threat is perceived raises questions regarding the short and long-term success of a grizzly bear reintroduction program. Excessive human-caused mortality, especially of adult females, is the primary factor limiting grizzly bear populations (Knight and Eberhardt 1985 and Nielson *et al.* 2004). In order for a successful reintroduction program, measures must be taken to protect fragile grizzlies from human-caused mortality and also to ensure protection of humans from grizzly bears. Twenty-two respondents expressed fear for personal safety and safety of others. Ten of these respondents expressed that they would take action and potentially destroy a grizzly bear without regard to legal ramifications if there was a perceived threat. Actions such as destroying a grizzly bear, if taken, would have a major impact on the level of success of a grizzly bear reintroduction. A forty-eight year old Idaho rancher said the following:

> If [grizzly bears] are around my herd, you're supposed to call fish and wildlife, but I am sure they wouldn't do anything. So I'd contact somebody that had a gun that was able to kill it, and kill it and hide it.

Grizzly bears compete with humans for space, game, and livestock (Mattson 1990). They are also potentially dangerous to humans. When grizzly bears come into conflict with humans over space or resources, there is often an increased risk of mortality to bears and occasionally humans. According to the landmark work of Craighead and Craighead (1971), grizzly bears that develop foraging habits that bring them into frequent and close association with people develop behavioral patterns that make them extremely dangerous. These bears learn to associate food-getting with humans and soon lose their

fear of humans and the human scent. The result may be a bear-human encounter ending in human injury or death (Craighead and Craighead 1971). Indeed, decades of research (Storer and Tevis 1955, Mattson and Merrill 2001, Nielson *et al.* 2004) consistently note that grizzly bears usually die as a result of some interaction with humans. The several thousands of people who visit the BE yearly combined with the people living in and around this area would make human/grizzly bear conflicts inevitable.

Twenty-respondents expressed that the grizzly bears would pose a serious threat to the safety of themselves, their families, and their personal property. Eight respondents expressed that they felt the grizzly bear posed no threat at all. The fear of grizzly bears is associated with a concern of being able to protect oneself, one's family and one's personal property without any legal ramifications. In British Columbia from 1978 to 1999, five people were killed and forty-one were seriously injured by grizzly bear attacks (British Columbia Wildlife Branch 2000) Under the ESA, as a threatened species, it is illegal to kill a grizzly bear. Under Alternative 1 for the BE Grizzly Bear Reintroduction, people could continue to kill grizzly bears in self-defense or in defense of others with the requirement that such taking be reported.

These are some of the comments expressed by the respondents regarding the right to defend property, self and family:

> I will also say that if your hands are totally tied, and you have no recourse, I would not watch a grizzly destroy my property or destroy my livestock. I'd take action and that's a grey area as far as legal to do.
>
> They'd be in the chicken houses eating the chickens, and they'd be killing the livestock. I just don't think you could put up with them. You'd have to shoot him probably to keep him off your doorstep.

> I'd rather be tried by twelve than carried by six any day. I will defend myself. I am not going to kill an animal just to kill it.
>
> If it showed aggression to me, I'm going to take it out. I'm going to provide the health, safety, and welfare to my family and my stock and worry about the consequences later.
>
> We have grandchildren now, and we don't want grizzlies that close to our children and grandchildren. I don't want them. They provide a risk to young people. The loss of livestock can be compensated with money. The loss of a human being cannot be compensated with money.
>
> I could foresee human death which is unacceptable. Just for the mere thought of having grizzly bears in our backyard or wilderness area, I don't believe any human life is worth that.

Habitat Suitability

Grizzly bear movement patterns have a strong correlation with the availability of plant and animal food sources (Apps *et al.* 2004). Grizzly bears can most often be found in areas of high elevation, steep slopes, rugged terrain, and low human access (ibid). Grizzly bears tend to den at high elevations, move to lower elevations during the spring to obtain green vegetation, and then follow the plant phrenology to higher elevations during the summer (Mace and Waller 1998).

The historic distribution of grizzly bears suggests that grizzlies are adept at utilizing a range of food sources. Their teeth and digestive systems are designed to chew and digest both plant and animal matter. The Interagency Grizzly Bear Committee (IGBC, 1987) stated that the grizzly bear diet consisted of plant roots, corms, tubers, clovers, dandelions, various fruits and nuts, earthworms, various insects, rodents, wild ungulates, trout, and domestic livestock. The Interagency Grizzly Bear Committee (IGBC) was formed in 1983—with members of the National Park Service; U.S. Fish and

Wildlife Service; USDA Forest Service; the states of Idaho, Montana, Washington, and Wyoming; and British Columbia—to lead the recovery of grizzly bears in the contiguous forty-eight states.

The Grizzly Bear Recovery Plan (USFWS 1993) identified the need to evaluate the BE to determine its suitability as a grizzly bear recovery area. Three past studies (Scaggs 1979, Butterfield and Almack 1985, Davis and Butterfield 1991) have been undertaken to evaluate parts of the BE for grizzly bears. All three of these studies have concluded that the BE contains suitable habitat to sustain a population of grizzly bears.

Several respondents in the study questioned that the BE provided adequate habitat for grizzly bears. Several of these dissenting comments have come from wildlife professionals with educational backgrounds in wildlife biology. Many of the respondents have concerns about the availability of food sources such as anadromous fish stocks and whitebark pine. Both are important grizzly foods, and the decline of these may have potential effects on grizzly bear habitat suitability in the BE.

Coastal grizzly bear populations with access to abundant spawning salmon consist of larger individuals that achieve greater reproductive success than interior populations (Hilderbrand *et al.* 1999). Meat is less available in interior regions than in coastal areas with abundant salmon runs. Hilderbrand *et al.* (1999) found that the importance of access to an abundant and high-quality food source such as salmon is evident in grizzly bear reproductive success and population density. For example, Hilderbrand *et al.* (1999) established that historically bears in the Lemhi Mountains of Idaho received ninety percent of their sustenance from salmon. A 500-pound bear tries to consume 65,000 calories a day, the equivalent of seventy pounds of salmon, starting in mid-July, so it can

get fat enough to make it through the winter. Current runs of anadromous fish in the BE would no longer provide a readily abundant food source and would be supplemental to the bears' diet at best (USFWS 2000). Eleven respondents doubt that the BE has a sufficient amount of food sources to support and sustain a grizzly bear population. The one food source they all took notice of was the lack of salmon in the BE.

Historically, whitebark pine was a major species in twelve to fifteen percent of the North American forest landscape (USFWS 2000). Whitebark pine seeds provide an important food source for grizzly bears and black bears in the Rocky Mountains and the inner mountain region (Tomback, Arno, and Keane 2000). Whitebark pine populations were reduced by a mountain pine beetle infestation between 1909 and 1940 (USFWS 2000). Also, white pine blister rust which was introduced to the western U.S. around 1920 has killed most of the mature whitebark pine in the northern and western portions of the Selway-Bitterroot Wilderness (USFWS 2000). Current levels have been estimated at twenty to forty percent of historic levels (Keane and Arno 1993). Research in the Rocky Mountain West by Mattson *et al.* (1996) and Tomback *et al.* (2000) show very clearly that in years when whitebark pine seeds are abundant and available to grizzly bears, their production of cubs is greater. In other words, having a nutritious food source improves the health of the parents, healthier cubs are produced, and the survival of the cubs is enhanced. In years with abundant whitebark pine cone crops, the population of grizzly bears has increased (Tomback *et al.* 2000). Several respondents fear that this historical food source for grizzly bears may not be in enough abundance in the BE to support a grizzly bear population. However, Butterfield and Almack (1985) and Davis and Butterfield (1990) concluded that the BE would support adequate sources of known

grizzly bear foods including elk and deer, small mammals, herbaceous vegetation and tubers, and fruits and nuts.

Eleven respondents expressed that the BE is not suitable grizzly bear habitat due to the lack of whitebark pine and absence of salmon runs. With this perceived lack of food sources they felt that grizzly bears are more likely to look at human resources for food. Sixteen respondents felt that the reintroduced grizzly bears would look to humans to find food. They expressed the following:

> There isn't fish in the river like there used to be. The white pine nuts aren't there any more. I don't think the elk population is what it used to be. They're not going to be there in the spring when the bears come out.
>
> There's not fish back there, salmon, like the old days and also I've been told there's a shortage of white pine trees. If there's no food for them, why put them back there?
>
> Central Idaho is missing the primordial food source for bears. They are going to find food somewhere. I can't imagine they would stay put away from people up and down the river corridor and away from towns. Grizzlies are missing a huge portion of what they have had historically in terms of food.

To conserve biological diversity, protected-area networks must be based not only on current species distributions but also on the landscape's long-term capacity to support populations (Carroll *et al.* 2004). Brostrom (1996) and Keane and Arno (1993) have found that two primary food sources for grizzly bears- whitebark pine tree seeds and salmon- have been significantly diminished in the BE from the historical abundance. Sixteen respondents expressed fears of human/grizzly bear conflict because the bears would be seeking food. Of these sixteen, eleven stated that these conflicts would occur due to lack of whitebark pine seeds and/or salmon in the reintroduction area.

Economic Impacts

Many concerns were expressed by respondents regarding negative economic impacts by having grizzly bears reintroduced to the area. Many of these impacts would be felt directly and would have a direct negative impact on the respondents' livelihoods. While some acknowledged that there might be potential benefits, many believed that the negative impacts would be far more damaging in nature. It was expressed by a few that the benefits would be mostly esoteric in nature.

Twenty-six respondents expressed that having grizzly bears in the Bitterroot would have negative effects on the economy. Eighteen of those expressed that only negative impacts would be felt. Four major concerns regarding negative economic impacts were identified and mentioned by several respondents. First, they expressed the view that having grizzly bears in the area would keep people from visiting the area out of fear for themselves and their families. Eleven outfitters said that they get questions all they time from potential clients asking if there are grizzly bears in the area. The following quotations express this concern:

> When I am selling my hunts a lot of people that come to me don't want to go around the Glacier and Yellowstone areas. They come to me because they know we don't have grizzly bears specifically. They don't want to mess with grizzlies. We get that comment often. On the hunting side it would keep certain hunters looking at different areas.

> I think there's a perception of grizzlies being man-eating beasts. It would certainly scare off a certain amount of our clientele. We get asked enough questions about black bears in our backcountry, much less grizzly bears. A certain amount of clients intent on booking a hunt in the wilderness would be hesitant or maybe not even book a hunt due to the fact that there are grizzly bears in the area.

> There are people that will say that more people will come because of bears, but that isn't true. That is what they said about the wolves. More people wouldn't come out of fear for themselves and their family because grizzly bears are in the area.
>
> As a fishing outfitter, would I get more business if someone saw a grizzly bear? Probably not.
>
> People want to know: are there bears? I do see the perception of people worrying about bears whether they are brown or black. If we had a viable population of grizzly in the Frank [Church Wilderness], it would be harder for me to say bears are not a problem. They're just a pest. I have dealt with them. They are a pain in the ass. I see very minimal economic gain and a fairly substantial economic loss. We have actually lost guests going to Alaska to go fishing because they didn't want to deal with grizzlies because they were afraid of them.

Second, these same outfitters expressed fears that grizzly bears in the area would change and affect how they have to run their trips and businesses. They would have to make much of their equipment "bear proof." They express that this would be not be easy or a cheap task. A few even questioned if making equipment "bear proof" was even possible. The United State Forest Service has issued various food storage orders in grizzly bear recovery zones. The orders state that the following requirements must be met in grizzly bear recovery zones:

- Human food and beverages, horse feeds, dog food, etc. either in possession or left unattended must be kept unavailable[7] to grizzly bears unless being consumed, prepared for consumption, or transported.
- Fish and wildlife carcasses must be kept unavailable to grizzly bears and at least 100 yards from any tent or sleeping area, trailhead, or recreation site, unless being eaten, prepared for eating, or transported.

[7] The Forest Service considers items unavailable if stored in a closed, bear resistant container, enclosed within a vehicle constructed of solid, nonpliable material, or suspended at least 10 feet clear of the ground at all points and 4 feet horizontally from any supporting tree or pole.

- ❖ Fish and wildlife carcasses must be kept unavailable to grizzly bears except at locations more than 1/2 mile from campsites, trailheads, and recreation areas.
- ❖ When departing the area, all food and refuse is removed from any bear resistant containers left in the area.

Violation of these special orders can be punishable by a fine of not more than $5,000.00 or imprisonment for not more than six months, or both.

Outfitters also expressed concerns about the protection of their equipment. Two rafting outfitters expressed that they heard grizzly bears like to mess with and chew on rubber rafts. The grizzly bear's claws and teeth could cause damage to their boats. They also expressed fears of the grizzly bears disturbing their camps by coming after their game kills and harvested fish. Several had already experienced these problems in other places. Third, the fear of providing adequate protection for themselves and their clientele were also of great concern. The following statements express these concerns of outfitters:

> . . . by restrictions with grizzly bears that would cause economic pain to outfitters such as ourselves, where we have to have everything out on a pack or a float trip that is grizzly bear proof. That may sound easy to people outside the industry, but it's tremendously complicated logistically to make your camps grizzly bear proof. How do you make a portable latrine grizzly bear proof? How do you make a portable kitchen where you make and prepare food grizzly bear proof? It's not like we can build concrete bunkers wherever we can. I think it is a huge detriment to them [outfitters] because so much of it is based on wilderness travel. If that was curtailed by grizzly bears, then that would be negative.
>
> We'd have to change a lot of our equipment and operation plan to become compliant with the Grizzly Bear Food Storage [Order]. Our kitchen would have to be different. Or manpower and labor would have to be different. Nobody's offering to foot the bill on that.

> I personally know a dozen outfitters that the grizzly bears about put out of business or forced them to totally restructure their whole business because of the bears' impact on their businesses.
>
> We operated a fishing lodge in Alaska for two years. [Grizzlies] were somewhat destructive with our float planes. The bears would scratch them and they would tear them up because they were chewy.
>
> I have heard from people in Alaska that grizzly bears like to get on rubber boats. Grizzlies like to play on rubber boats. We were told by an expert at a grizzly bear symposium that we could just put our boats up in a tree. Well, what damn foolishness!
>
> A bigger problem for us would be the regulatory atmosphere we would have to deal with such as camping procedures, things like these metal boxes that are supposedly bear proof. I'd be more worried about the hoops we would have to jump through as far as regulations than the actual damage the bear might do.

A fourth fear commonly expressed by the hunting outfitters is the effect that the reintroduction of another predator into the ecosystem will have on big-game populations, most notably elk. Many respondents expressed the view that wolves, a recently reintroduced species to the area, have had a negative impact on elk populations and thus have had a negative impact on their outfitting hunts. The wolf reintroduction and its influence on local responses toward the grizzly bear reintroduction program will be discussed further in the next section. Several participants expressed the view that they do not want another predator reintroduced to an area that may affect game populations:

> You're cutting into some people's pretty good livelihood. The elk hunting has gotten worse since the wolves. I'd hate to add additional pressure to hunting outfitters and a business that isn't growing. Fish and Game with the introduction of predators you've essentially killed 'the golden goose.'
>
> When the elk numbers went down the Idaho Fish and Game cut the outfitters tags. They cut all their licenses down. ... if a hunter can't get a license, every time you lose a tag you lose $4000 in revenue. I don't see anybody from the Defenders of

Wildlife writing checks to the outfitters for the economic damage caused by the reintroduction of wolves.

Nine negative responses regarding livestock loss came from ranchers. One of their major concerns comes from loss of livestock due to predation by grizzly bears. Defenders of Wildlife (DOW) paid $12,795 in grizzly bear compensation funds to ranchers and sheep growers in Montana in 2004 (DOW 2005a). Payments were for one horse, nine cattle, and thirteen sheep that were confirmed kills by grizzly bears and an additional three calves that were most likely bear kills. In all, DOW has paid $112,668 in compensation in Montana from The Bailey Wildlife Foundation Grizzly Bear Compensation Trust[8] since it's founding in 1997 (ibid).

Grizzly bears, black bears, wolves, coyotes, and mountain lions are the species most often compensated for due to livestock depredation in the United States (Montag and Patterson 2001). Approximately 33,000 head of livestock were killed by predation by various animals in Montana and Idaho, totaling a combined value of $3,838,000 in losses (Table 5). Public receptivity to predator compensation programs is essential to their success (Montag and Patterson 2001). Since public support for compensation programs require acceptance of predator conservation and reintroduction efforts, general public opinions toward the broader issue of predator conservation should be addressed.

[8] The Bailey Wildlife Foundation Grizzly Bear Compensation Fund is a program administered by the Defenders of Wildlife that pays livestock owners in Montana for losses due to grizzly bear predation.

Table 5 Livestock Depredation Figures for Montana and Idaho 2000: Number Killed and Value in Dollars.

STATES	CATTLE*	CALVES*	SHEEP**	LAMBS**	TOTAL
Idaho	300	2,300	2,800	7,400	12,800
	$212,000	$632,000	$283,000	$311,000	$1,438,000
Montana	600	3,200	3,800	12,600	20,200
	$477,000	$989,000	$334,000	$592,000	$2,392,000

Source: * USDA. (2001*). U.S. Cattle and Calves Predator Loss.* Washington D.C., National Agricultural Statistics Service, USDA.
** USDA. (2001*). U.S. Sheep and Lamb Predator Loss.* Washington D.C., National Agricultural Statistics Service, USDA.

One third of the respondents (eight outfitters and two ranchers) felt that having grizzly bears in the area could actually help the local economy. They felt that many people would come out to view the bears along with other wildlife in their natural habitat. They also believed that there is an intrinsic value in "keeping Montana/Idaho wild" and having grizzly bears in the area would contribute to this goal. In 2001, over 1.3 million people viewed wildlife in Montana and Idaho and spent over $575,000,000 (USFWS 2001). One participant expressed that with the grizzly bears in the area the property of his land would increase. The few opinions that were expressed by respondents regarding positive economic benefits include the following:

> The opportunity to see a grizzly in a natural environment would be a benefit for wildlife viewers, outdoor people in general, and add to the outdoor experience and industry.
>
> Selling the grizzly bear and the area as a wild place adds to a more complete wilderness experience. Most of my guests would be excited.
>
> The cattlemen will say it will be a disaster for the cattle industry because they'll be killing all their cattle. If I were a sheep rancher I'd probably be on the other side of things, so I can empathize. It's a function of looking at the greater good

> and keeping Montana wild. That will have a benefit that's hard to measure but it will certainly be there.
>
> It will help with tourism. Ranchers will say that it will hurt their livestock, but I feel that tourism has more potential than livestock in Montana.
>
> It would also enhance the value of rural ranch properties like mine. There is a certain mystique about having seen a grizzly on your ranch. Makes your place more attractive to high dollar people from urban areas. Makes it a throwback to the Wild West.

Three participants expressed that reintroducing grizzly bears into the BE would have no significant bearing on the economy at all. The majority of respondents felt that the negative economic impacts from a grizzly bear reintroduction would far outweigh the economic benefits. Some of the benefits expressed by the participants were esoteric in nature. The fear of livestock depredation exists and is documented. Experiences from past reintroductions have raised caution as to people believing in a compensation plan that will give them full market value for livestock losses. Many outfitters expressed a loss of clientele due to the presence of grizzly bears and worry about the costs they will have to incur in their business operations in order to meet the proper grizzly bear management practices.

Previous Experience with Predator Reintroduction

Many of the negative responses given regarding grizzly bear reintroduction were influenced by past experiences with wolf reintroduction. In 1995, the USFWS reintroduced fifteen wolves into Idaho. In 1996 an additional 20 wolves were reintroduced. Since that time, the number of wolves in Idaho has increased, and by

December 2004 there were approximately 420-500 wolves, twenty-seven verified breeding pairs and approximately forty-three documented packs well distributed from Interstate 90 south to Interstate 84 in central Idaho (Idaho Department of Fish and Game 2005). Many respondents expressed that they dislike wolves, were against reintroduction when it was first proposed in 1990, and that the reintroduction took place against local interests due to pressures from interest groups such as conservation organizations. They also felt the government pushed the wolf reintroduction through despite a significant number of local residents being opposed to it. Respondents' comments regarding past experiences with the wolf reintroduction include the following:

> I believe wolves are horrible. They scare elk out of the area and ruin hunts. I'd be a grizzly bear fan compared to a wolf fan.
>
> The wolves have caused more havoc and grief than even the naysayers said they would. The wolves did so well I am afraid the griz could really become a nightmare and a problem.

Many of the respondents have already lost several calves due to what they believe to be wolf predation. From 1987 to 2005 the DOW has paid $506,150 to thirty-nine ranchers in the states of Montana, Idaho, Wyoming, New Mexico, and Arizona from The Bailey Wildlife Foundation Wolf Compensation Trust[9] (DOW 2005b). In these instances they expressed that they had not been given the proper compensation that was promised them in the wolf reintroduction plan. In the wolf reintroduction management plan ranchers are to be compensated the full market value of any lost livestock due to wolf predation. The DOW, a conservation group based out of Washington D.C., promised to

[9] The Bailey Wildlife Foundation Wolf Compensation fund is a program administered by the Defenders of Wildlife that pays livestock owners for losses to wolf predation due to the recent reintroduction of wolves to Yellowstone National Park and the Northern Rockies.

pay the compensation to ranchers rather than the government. The DOW distributes the payments but has government agencies verify the claims. The DOW pays full market value for livestock *verified* to be killed by a wolf. If the livestock was most likely, but not verified, to be killed by a wolf the DOW pays fifty percent of market value for the lost livestock. The decision to pay for probable losses is made on a case by case basis by evaluating circumstantial evidence (ibid). Twelve respondents expressed that the DOW and the involved government agencies did not anticipate the large number of livestock kills by wolves and that it is very difficult to verify to those involved that a livestock death is actually a result of a wolf kill. Several ranchers stated:

> Wolves have killed six of my cattle. I have been reimbursed for two. This Defenders of Wildlife compensation plan is pretty much public relations. If the local newspaper and television come down, take a picture of a dead calf at your place, the Defenders of Wildlife will stand up and say here's your money. If there's no publicity involved, and you actually didn't see the wolf kill the calf, you're not going to get paid.
>
> I've been totally against [wolf reintroduction]. It's devastating what they've done to the elk herds back there. Right here above the ranch they've had several calf kills already.
>
> There was this deal down there in Salmon, Idaho where a veterinarian said the calf had been born dead because of its lungs. The 'do gooders' as I call them said the calf was born dead. That calf should have growed up and had a whole bunch of cows by now. They never got paid. She should've had eight calves in those ten years.
>
> [Defenders of Wildlife] said what about depredation? What about livestock kills? They said maybe a half dozen [kills]. The first year one rancher came back with twenty-seven dead cows or calves. That's a little more than the six or seven they were talking about. They had no idea what was going to happen.

One respondent expressed the view that the wolf reintroduction was a success and a benefit. He lives in Montana and has lived and ranched in the area for seven years.

He leases his ranch land to others to use as pasture for livestock. He also stated that he gives money to the Defenders of Wildlife and supports the Yukon to Yellowstone Initiative. He said the following regarding wolves:

> If people want to understand, and that wouldn't be the rancher in Montana or Wyoming. I mean the people that really want to understand. They can look at the success of the wolf reintroduction of 1995.

Many of the outfitters expressed the effect that the wolves have had on elk populations and their businesses. They believe that the wolves have had a devastating effect on the elk populations in the BE. Along with elk predation, participants expressed that the wolves have driven elk out of certain areas. "If there are wolves in the area, you're guaranteed not to see any elk," said an outfitter respondent. They also believe that the grizzly bear would add another predator to the system and diminish the elk and other ungulate populations even more and continue to drive them out of certain areas. A thirty-two year old hunting outfitter said the following regarding wolves, "My whole livelihood is going to go down the tubes if they don't control [wolves]."

So far, there is scant biological evidence that wolves threaten the elk herds in these states or even the elk harvests. It is known that the critical calf-cow ratio has shown a significant drop in Yellowstone and Jackson Hole, but biologists aren't sure wolves are the sole cause of that in central Idaho (Oakleaf *et al.* 2003). Calf-cow ratio trends are mixed, with a decline in the Middle Fork of the Salmon River area but increases in portions of the Clearwater River country in north-central Idaho since the 1990s. Whether there is evidence to support the wolf effect on ungulate populations or not, the fear among many Idahoans and Montanans that the wolf is contributing to declines is very

real. It is also known that wolves do affect the ways elk behave. They will move elk out of an area and break them into smaller groups and push them into denser timber where they are harder to find (Thompson 1993).

Distrust of the Government

According to many of the respondents, the past wolf reintroduction and the past handling of the grizzly bear reintroduction have also caused a large amount of distrust between locals and the government agencies involved in the processes. They feel that the consensus among the local population was against both the wolf and grizzly bear reintroduction. Four respondents expressed that they think the USFWS has secretly and illegally already placed grizzly bears in the BE. Several respondents have expressed that they feel the government is carelessly spending money on these projects and pushing the reintroductions against the local residents' views to support their own agendas. Many felt those involved also seemed to "talk down" to those that attended the open houses for the reintroduction plan. One respondent who works for the Idaho Department of Fish and Game, along with being a river guide said the following on the wolf reintroduction:

> The way [wolves] were introduced had some glitches. First the sites they [Idaho Department of Fish and Game] said they were going to put them into they didn't put them into. Instead they were looking at areas outside of the wilderness. Now look at the precedence. We said we were going to do this but we did this.
>
> What I've seen us do as wildlife professionals is get overzealous in protection of species sometimes to the point that we alienate people to the species we want to protect.
>
> I'd prefer coming in naturally and not the reintroduction. I don't think we really thought the wolf thing through. We [Idaho Department of Fish and Game] really don't have control over that.

These comments were echoed by other participants in the study. They referred to the fact that the Idaho Department of Fish and Game did not release the wolves where they said they were going to. One respondent said, "they did it once, they might do it again" referring to the possible reintroduction of grizzly bears. Along with this attitude several expressed that they felt that contingency management plans were not sufficiently thought through pending different outcomes from the wolf reintroduction. Respondents said the following:

> I heard [grizzly bears] were placed in the [BE]. How can the government work that way? They're supposed to be working for us, but instead they are being secretive. They're doing things underhandedly.
>
> I think it has been a dishonest venture from day one. They take things into their own hands and go ahead and do it irregardless of livestock, people's livelihoods, and people's safety. They don't care about the ranchers.
>
> When you dealt with the local people as opposed to feds, they were much easier to get along with than the feds were. My case is I would call about the wolves and they'd deny it. Problems with cattle, the feds were real negative. They didn't want to report it because it makes the wolf program look really bad. The local Fish and Game we had no problems. The feds always felt their jobs depended on the wolves, and if we made the wolves look bad, their jobs would go away. I would rather deal with the local Fish and Game than the feds.
>
> Both [wolf and bear reintroduction] are getting slammed down your throat. You don't have a say. The Fish and Wildlife Service just blatantly lied to us about it. They just want their agenda. Their misinformation is not good as far as having people trust them. It's bureaucracy at work.
>
> My opinion is it's just something they decided to do, and they're shoving it down everybody's throats just like the wolves. At the meetings everything is cut and dry. You can't present a valid case that they'll listen to because they have their minds made up. So they are going to do it. Basically the Fish and Wildlife Service is a joke. They have made their decision with outside interests, and they are going to do it whether you like it or not.

> These associations and agencies are supposed to be looking out for the wildlife. They turn into more of a political deal where they are more worried about pacifying the people than looking after the resource

Hostility Towards Outsiders

Grizzly bear reintroduction is a national issue. The majority of the reintroduction area is on federal land. Comments regarding the reintroduction have come from all around the United States. As evident by data presented in Appendix A, a large number of those in favor of reintroduction live away from the reintroduction area in places such as California, Washington, Oregon, Wyoming, Utah, and Colorado. Many of the participants in this study that are opposed to grizzly bear reintroduction expressed hostility to those living outside of the area. They feel they had a dramatic impact on the reintroduction processes the first time around. They feel that an overwhelming majority of those living in the area are opposed to the reintroduction, while those that live outside the area who they say will not be directly impacted by having grizzly bears in the area are in support of reintroduction. Many expressed that the reintroduction was a national issue but more credence should be given to the local opinions by those involved in the final decision making process. They feel the decision should be made locally because they are the ones that are going to have to deal with the consequences of having grizzly bears, not those that live outside of the area. In part, these are the same reasons for Governor Kempthorne's suit against the Clinton Administration's grizzly reintroduction plan in 2001. Several respondents made the following comments when asked the question, "Do you feel grizzly bear reintroduction is a local or national issue?":

> Locally, people that are going to have to live with the thing should have a certain voice louder than the person that is just going to come view it. If I'm not entitled or allowed to carry a weapon to protect myself and my people because some person in New York thinks I shouldn't have that right, then I say to the New Yorker 'Go to hell.' I don't think a person in New York has the right to tell me I don't have the right to defend myself.
>
> The people that want to push the grizzly are not from around the area, and they don't have any idea about what's really going on. If those people that were pushing the wolves had seen the damage they have done, they'd realize what is going on.
>
> ...absolutely a local issue. Whether the two are exclusive is something else. There are lots of folks on the national level who think we ought to have grizzlies. They can sit back in suburban New York and feel warm and fuzzy knowing that there are grizzlies out here, but they don't have to put up with the damn things.
>
> If it was a local issue it would be over already. The only way that they can get these that don't benefit the local areas through is to make it a national issue.
>
> I think it's a Supreme Court issue when our rights mean nothing.

Eight respondents said that they had attended at least one of the open houses held by the Fish and Wildlife service regarding grizzly bear reintroduction. They expressed that they were misrepresented by the news and were not given a fair chance to express themselves publicly. These respondents put it this way:

> I went to the meeting with the governor in Hamilton and the news was there. Of the fifteen people who spoke maybe four were for it and the rest were against it. Then you read the newspaper the next day and they say it was 50/50. That's how these kinds of things work. Now how can you compete with that?
>
> The last open house was held three years ago at the Stagecoach. If you wanted to say something you signed in as you came in. It was supposed to go in the order you signed in. There was a group from Sun Valley that came in. They were a little late getting there so they weren't the first ones to sign in. But they all got to talk and the ranchers didn't. The people that were mainly involved didn't get to say anything.
>
> A lot of people that attend these meetings don't live here. They're bused in from other places because interested people want their voice heard and they are going to bus people in. A lot of the voice comes from outside of the community. The people

> that are really vocal don't live around here and are brought in by those that want the thing. They get paid to go to those things and we don't.
>
> If it came down to grizzly bears being wiped off the face of the earth or making another dollar, I'll give up the outfit and go work somewhere else, if I am going to be part of an animal's extinction. But I don't think that is the case. Grizzly bear populations are fine in Alaska, Canada, Yellowstone, and Glacier. I think what is happening here are just more the environmental groups just wanting more and more and more. Out of all the Wildernesses I think it's nice to have one or two that are grizzly free.

Another view expressed by many was that the local opposition could not compete in time wise or financially with the special interests groups that are, in their opinion, trying to push the reintroduction through. They believe that the outside groups have much more time than they do to dedicate themselves to the cause. They see no way that they compete with the money that the conservation groups have. They consider themselves working people who do not have the time and financial resources to attend these public hearings. This is what some respondents expressed about having the time and financial resources to compete with outside interests:

> There are bigger powers at play on the other side of the fence than much of our guys can deal with.
>
> It has always kind of amazed me at how these things happen when everyone I talk to is just adamantly against these reintroductions. They just happen anyway due in large part to the amount of funding these people have. The local person just feels hopeless. We basically just sit around and bitch after it happens.
>
> If you tried to organize meetings with your typical left winger, you would find that they have way more time than myself. The people that are really affected are so busy with their heads down working all the time, and we don't have the luxury of organizing and getting vocal.
> What this comes down to is the boisterous minority push these things through. People around here are too busy trying to scrounge out a living that they aren't reading the newspaper. They don't hear that there's a big meeting, or if they do hear about it, they feel that it is just for show. I been to a few and the people that

> like to control these meetings are these minority groups that are trying to make enough noise to make it sound like it's a good thing.

The amount of distrust and hostility toward the government and outside interests is a major area of concern generated from this research. Much of these attitudes stem from the past dealings with the wolf reintroduction and repairing this damage will be pivotal and no small task to a future reintroduction of grizzly bears.

Attitudes Towards Grizzly Bear Reintroduction

The past sections have been dedicated to examining attitudes people have toward grizzly bears and to presenting information about the factors that most significantly affect attitudes towards a grizzly bear reintroduction to the BE. Now that specific factors that shape these attitudes have been identified and examined, the overall attitudes towards grizzly bear reintroduction will be investigated.

Twenty-one of the thirty respondents expressed that they were opposed to grizzly bear reintroduction. Eight supported it, and one expressed no opinion one way or the other. Most of the eight participants who supported the reintroduction did not go in-depth as to why they supported a reintroduction. Three of the eight were residents of Missoula who operated their businesses in the BE. A thirty-two year old river outfitter expressed the following:

> I'm for it [reintroduction]. It would enhance the whole wilderness. The [human] population is low, there's plenty of space, probably enough food. There is no reason why they shouldn't be back, other than people's misinformation on the evils and terribleness of grizzly bears. We should preserve wilderness, as wilderness, for the sake of wilderness, just as wilderness.

Respondents also expressed that lack of education about grizzly bears is the main factor influencing opposition to a reintroduction. They said the following regarding the need to educate the public on grizzly bears:

> Education, serious education. Not just a bunch of flyers the FWP [Montana Fish, Wildlife and Parks] and forest service put in their office for people to come and pick up. I'm talking about all those mandatory classes where they actually educate people. If they want to live in this area, these bears were here first. Education, that's what I'd do.
>
> If we're going to try and accomplish this kind of thing the most important part of it is educating the people that live in these areas about the animals and their behaviors, both for the peoples benefit and the animal's benefit. It's basically an education plan of the people. You will educate bears through your behavior.
>
> It's that inbred attitude that they have here and their grand pappy's grand pappy's grand pappy started it and it hasn't changed. There's a very unsophisticated, minimally educated population base in the Bitterroot Valley. There really isn't that much value for education. They've got other things on their minds. To get people educated on this environment is a really hard sale because you're starting at a really low point and it's not based on reason. We're going to have to talk to the next generation.

The vast majority of the respondents were opposed to grizzly bear reintroduction for various reasons that have been discussed previously. They were opposed to the reintroduction because of impacts it would have on them personally and impacts that it would have on the grizzly bears as well. Some also expressed that they do not feel that the overall grizzly bear population is endangered. Those against reintroduction said the following:

> I think it's a recipe for disaster for both the bear and the people in the urban area. I've been opposed to it until a management plan is made public that would... We're not opposed to bears. We're opposed to a plan that would be so restrictive that it makes the advent of having bears there...The price is worth more by not having

them there. People have to know that there's a plan that protects them if there is a problem.

I think it's insane. I would hate it with all my heart. Backpackers and hikers can go into the Selway-Bitterroot and be safe. Why create that problem? We don't need to introduce problems we haven't got.

Upfront I really don't like the idea of the reintroduction. I like the idea of the bears coming in on their own and trying to get some kind of management plan up before hand.

The participant that was undecided regarding reintroduction said his opinion of being for or against reintroduction was dependent on the regulations that would come with it. The majority of respondents in this study were opposed to grizzly bear reintroduction. The respondents have very strong feelings regarding the issue.

Chapter Summary

This chapter described study respondents' attitudes towards grizzly bears and grizzly bear reintroduction. Factors influencing ranchers' and outfitters' attitudes were also discussed. The majority of respondents said that they liked bears, but the majority of respondents were also non-supportive of the grizzly bear reintroduction program. Reasons for these attitudes included fear for safety of oneself and one's family, vulnerability of personal property, access restrictions to federal and state lands, previous negative experiences with the government and other allied agencies in the wolf reintroduction program, hostility toward conservation groups and others that live outside of the immediate area that are in support of reintroduction, perceived negative economic impacts, and distrust of the government on their handling of the

reintroduction program to date. Several respondents also had concerns that the BE did not provide enough quality habitat to support grizzly bears. Statistics were given to as to why these issues are of concern and scientific evidence was provided to see if these concerns could be substantiated.

CHAPTER SIX

DISCUSSION AND CONCLUSIONS

The goal of this research was to examine the attitudes and perceptions of residents with land-based occupations toward grizzly bears and grizzly bear reintroduction to the BE. In this study thirty individuals with land-based occupations were interviewed. Qualitative research methods were used to provide an in-depth examination of the beliefs and thought processes of the thirty study participants. The study was primarily conducted in Lemhi County, Idaho and Ravalli County, Montana. Once specific attitudes were identified I attempted to discover the factors that influence the attitudes of the thirty study participants.

This study adds to a growing list of publications regarding animal/society relations in the discipline of geography. This study makes three main contributions to animal society relations. One is theoretical in nature. This study describes the struggle between humans and grizzly bears over sharing space. Methodologically this study uses interviews and field observation to examine attitudes and perceptions of individuals towards grizzly bears and their recovery in the BE. Research on this topic using in-depth interviewing has never been undertaken. Qualitative methods are being increasingly used by geographers to explore some of the complexities of everyday life in order to gain a deeper insight into processes shaping our social worlds (Limb and Dwyer 2001). Empirically, the study found factors that influence local residents' attitudes and perceptions toward grizzly bears and the grizzly bear reintroduction program. The study

looked at the sacrifices that have to be made by both humans and animals in order to mutually coexist. The participants in this study feel a burden of personal responsibility regarding grizzly bear reintroduction.

Preserving the grizzly bear not only means taking care not to harm the animal directly, but also requires that the habitat on which the grizzly relies be maintained. Grizzly bears require large areas of habitat in which to roam in order to survive. Often times this habitat comes in direct competition with humans. When trying to reintroduce a large predator such as grizzly bears that can and are known to harm humans, the issue of human tolerance becomes complex and must be addressed thoroughly and satisfactorily in order for the reintroduction to have a chance at being successful.

For a successful grizzly bear reintroduction to the BE, land users must be adequately helped in dealing with the perceived sacrifices they must endure if the grizzly bear is brought into the area. The burdens local residents feel they will bear are psychological (safety concerns for family and self), financial (property damage, livestock loss, costs for new equipment), and loss of property freedom and revenue (for the definitive preservation of habitat).

The results from this study suggest that progress towards reintroducing grizzly bears into the BE must apply a multi-faceted approach that incorporates potential solutions that attempt to address all the needs of those that are most likely to be directly affected by the reintroduction. Once begun, the effort must be all inclusive and consistently carried through. Those that are most likely to be directly affected must be actively involved in the reintroduction efforts so they can be assured of a feeling of

personal control. These elements are essential to voluntary compliance programs (Creighton 2005).

What are the needs described by the participants in this study? Many participants stated they perceive a need for more education of the public regarding grizzly bears. They need to be assured that they will be justly and steadfastly compensated for any livestock losses that may be incurred by grizzly bears. They also must be assured that protection of themselves and their families takes precedence over the protection of the grizzly bear. Most importantly they must be assured that they can continue to make their livings to support themselves and their families with little or no restrictions. All the participants in this study take part in outdoor recreation which is part of the culture of this area. They do not want their access to outdoor activities on public lands to be cut off because of grizzly bears. They must be assured that their interests are significantly addressed in the reintroduction process. They also need to be further convinced that the BE is habitat that can adequately support a viable grizzly bear population. Relations between the government and advocates of the reintroduction also need to be improved because they have been damaged by the proceedings from the wolf reintroduction.

Respondents' fears of grizzly bears appear to be strong. Almost all the respondents had good basic knowledge of the grizzly bear. They were all well acquainted with at least some of the physical differences between grizzly bears and black bears. They were quite aware of the dangers that grizzly bears present. They want to maintain the right to protect themselves, their families, and their property from a threatening grizzly bear. Most participants had positive attitudes toward grizzly bears and acknowledge and respect their place in nature. Many were not opposed to having grizzly

bears in the BE if they migrated there naturally. They just did not feel that it was a good idea to reintroduce grizzly bears to the area for both their sake and the sake of the grizzly bears. They also questioned the notion of bringing in an animal that is known to cause human fatalities to an area where it has a chance of human encounters. Several respondents have had or know someone that has had past experiences with grizzly bears. All the respondents spend a good amount of time in the reintroduction area. They do not want their access to these areas to be restricted because grizzly bears are present there.

Many respondents expressed the view that the BE is not a suitable habitat to sustain a grizzly bear population. They raised the question: "If the Bitterroot Ecosystem is such great habitat, why aren't they already there?" They fear that the historical food sources such as salmon and whitebark pine nuts have been depleted in the BE to the point that it will not be able to support a grizzly bear population. The respondents believe that this lack of food will bring grizzly bears in search of food into human areas. Parties supporting reintroduction must further convince individuals opposed to reintroduction that the BE has enough food to sustain grizzly bears.

Some economic impacts of a grizzly bear reintroduction can be predicted, but the true impacts will not be known until months or even years after reintroduction. All of the participants in this study make at least part of their living off the land. Twenty-seven of them make almost all of their living from the land. Fears exist that having grizzly bears reintroduced to the area will significantly affect their livelihoods. Ranchers and outfitters have the fear of losing livestock. Outfitters fear having to change their business practices in order to comply with the presence of grizzly bears. The changes will cost somebody money. Along with additional expenses the outfitters also expressed that they would lose

clientele due to the presence of grizzly bears. They feel the many clients will not want book trips out of fear of grizzly bears, and that these potential clients will look elsewhere where there is no threat of grizzly bears. Outfitters also had the fear that having grizzly bears in the area will drive large numbers of hunting game out of their hunting districts. The effect on game will also make it more difficult to book hunts. The issue of restrictive access was again brought up by many of the outfitters. If their access to their hunting districts, which they pay for, is restricted or taken away due to grizzly bear management, they will be forced to find alternative means of running their businesses.

The outcomes from the wolf reintroduction of 1995 have had a negative influence on many of the participants in this study. For many the wolf reintroduction has set the precedence for the grizzly bear reintroduction. Although many recognize that wolves and grizzly bears are completely different types of animals, they can still see some of the same circumstances occurring with the grizzly bear reintroduction as did with the wolf reintroduction. One major concern was compensation for lost livestock due to predation from grizzly bears. Several participants said that they have or know someone that has lost livestock due to wolf predation. In these cases they say that it has been difficult to obtain the compensation promised them by the wolf reintroduction plan. Some said they have not received any compensation for loss of livestock due to wolves at all. The parties responsible for compensation must follow through on their promises and need to improve their relations with livestock owners.

This research also found that there is a strong hostility between the participants in this study and outside influences such as conservation organizations. Some of these feeling are a result of previous interactions during the wolf reintroduction. Most

participants said that they did not have the time or the finances to compete with the outside groups. Many of the outfitters had the view that the grizzly bear reintroduction was being used as a means by some conservation groups to eradicate hunting in the area. They feel that these outside influences have too much influence on the issue when they are not the ones that will be directly impacted if impacted at all by the reintroduction. The reintroduction area is all federal land so it is indeed a national issue. Many of the participants acknowledge this, but they felt that they should have a much stronger say in the final decision. In future proceedings all involved parties will need to take a much closer look at the impacts of a grizzly bear reintroduction and listen to the thoughts of those that are going to feel these impacts directly. They must find a way to weigh the importance of the opinions of those that live in the area.

Also a matter of serious concern is the distrust that many of the participants have toward the government agencies involved in the reintroduction process. Several participants expressed that with the wolf reintroduction the government agencies blatantly lied about what they were doing. Many brought up the fact that the USFWS did not release the wolves where they said they would. They also expressed that they felt the wolf and grizzly bear reintroductions were being pushed against the wishes of most of those living in the area. They felt that their thoughts and opinions were basically ignored.

Public relations programs should attempt to persuade people to support the reintroduction program, or at least, not actively oppose it (Clark *et al.* 2002). In order for a reintroduction to take place with limited opposition from the locals, the involved government agencies must reanalyze and improve how they communicate with the public. Relations between the local public and the government have been badly damaged

over the past several years. Serious work will need to be done to improve these relations. The government must show the local people that they are sincerely concerned with local interests and that the government will take necessary actions to ease the burden on the local communities. Government agencies must incorporate local interests into the final decision making process on the reintroduction if it comes up in the future.

Understanding the concerns of those that are going to be most directly impacted by a reintroduction of grizzly bears to the BE needs to be a prerequisite for future discussions involving reintroducing grizzly bears into the BE. This research raises the issue that there may be strong opposition to grizzly bear reintroduction by those that have an economic tie to the land. Most of the participants in this research opposed grizzly bear reintroduction to the BE. Future discussion concerning grizzly bear reintroduction needs to take a more in-depth look at the attitudes of those that are most likely to experience the impacts of the reintroduction directly. The participants in this study felt that this has not been done.

Grizzly bear reintroduction is a very complex socio-political issue. Very strong views coming from many directions exist. The issue is extremely political. It is not a simple matter of bringing an endangered species into an area for means of conservation. This study focused exclusively on the attitudes of those that have a personal economic tie to the land. In conclusion, this qualitative study exposed some critical issues involved with grizzly bear reintroduction. These issues will continue to be important for grizzly bear recovery throughout the American West. The scope of the questions aimed to identify the factors that influenced attitudes toward the reintroduction of grizzly bears to the BE. Further studies could be conducted on a much broader scale in order to support

or refute the findings in this study. Obtaining a better understanding of the concept of grizzly bear/human relations, and how they interrelate and affect attitudes toward grizzly bear reintroduction would seem a productive focus for future research. This study's approach is versatile and applicable to future grizzly bear public involvement efforts, as well as to other wildlife protection issues.

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APPENDIX A

EXCERPTS FROM THE REPORT: SUMMARY OF PUBLIC COMMENTS ON THE SCOPING OF ISSUES AND ALTERNATIVES FOR GRIZZLY BEAR RECOVERY IN THE BITTERROOT ECOSYSTEM — USFWS, SEPTEMBER, 1995

DEMOGRAPHICS OF RESPODENTS

Who Responded

Organization Type	Number of Signatures
Individual Citizens	3,163
Businesses	13
County Officials	3
Organized Groups	45
Congressional / Legislative Elected Officials	4
City / municipal / local government	2
State Government / Agencies	4
Schools, Universities	4
Youth	2
Tribal Government	2
Total	3,247

How They Responded

Response Type	Number of Responses	Number of Signatures
Letter or Post Card	565	1,311
Open House Attendees	306	306
Petitions	6	809
Form Letters	6	821
Total	883	3,247

Where The Respondents Were From

Geographic Area	Number of Written Responses
LOCAL MT Counties of Ravalli, Mineral, Missoula, ID Counties of Clearwater, Idaho, Lewis, Nez Perce, & Shoshone	399
REGIONAL Rest of counties in Idaho & Montana, Adjacent States of WA, OR, NV, UT & WY	173
NATIONAL Rest of U.S. and International	125
TOTAL	697

SUMMARY OF PETITIONS

Issues / Concerns	Number of Signatures	Area where petition was generated
#31 - Oppose reintroduction, human / livestock safety & orchard / crops concerns	42	Local, Ravalli & Missoula Counties
#32 - Oppose reintroduction & request withdrawal from proposed rule making	40	Local, Ravalli & Missoula Counties
#33 - Oppose reintroduction, concerned with closing Magruder Corridor, cost to implement, and effects to humans and domestic animals	47	Local, Ravalli County
#34 - Support reintroduction & Conservation Biology Alternative described in Form Letter discussion above	13	National, mostly Colorado
#35 Support reintroduction & Conservation Biology Alternative described in Form Letter discussion above	43	National, generated in Pasadena, California
#36 - Oppose reintroduction, feel it is threat to life & property and will restrict	619	Local, Ravalli & Missoula Counties

SUMMARY OF OPEN HOUSES

Date and Location of Open House	Number Attending	Site-Specific Questions / Concerns
July 5, 1995 Grangeville, Idaho	35	None
July 5, 1995 Orofino, Idaho	55	1. Wait until ESA changed before proceeding further with reintroduction efforts. 2. Broad support for coalition's "citizen management committee" alternative. 3. Why was Salt Lake City chosen as a regional city for these meetings, and not Spokane or Portland?
July 6, 1995 Hamilton, Montana	125	1. Noxious weeds - bears transporting weeds seeds in fur. 2. Ravalli County Commissioners are opposed to reintroduction 3. Who is responsible if someone is killed or maimed? 4. Irrigation users maintaining wilderness dams are concerned with danger of working near bears. 5. Was economic stability of this area considered? 6. Effects to outfitters guides businesses? – and - 7. Why was the River of No Return deleted from the recovery area? 8. Fire suppression & its role in vegetation & therefore food for the bear hasn't been addressed. 9. Don't like this format for a meeting, should break into small groups & then report back. 10. Provide rental service for bear food containers. 11. There is no compensation fund for "registered livestock"
July 6, 1995 Missoula, Montana	65	1. Extend the comment period to allow for extensive public participation. 2. EIS must evaluate a habitat protection plan 3. Concerned with conflicts with landowners in lowland spring habitat. Protect bears during spring migration to lowland creeks.
July 10, 1995 Boise, Idaho	31	
July 10, 1995 Helena, Montana	10	1. How many bears do we need in North Continental Divide, Yellowstone & Selway-Bitterroot Area for declassification? 2. Linkage zones between 3 areas? Do they work? 3. Is there enough food available in Selway to support healthy grizzly population? 4. Have science committee make recommendations to an Advisory Committee who advises the lead agency responsible for management.
July 11, 1995 Salt Lake City, Utah	7	1. People who are outdoor enthusiasts and supporters elsewhere are generally not in favor of reintroduction of grizzly into Selway-Bitterroots. Want one area in the Region without grizzlies.

APPENDIX B

SCRIPTED SEMI-STRUCTURED INTERVIEW INSTRUMENT

"I would like to begin the interview by asking a few questions about you personal background in the area."

1) How long have you lived in this area? In Montana?
2) How would you approximate you age?
3) What is you occupational background?
4) How would you describe yourself?

"I would now like to ask you some general questions about bears."

5) Do you like bears?
6) How would you describe the difference between grizzly bears and black bears to a child?
7) Do grizzly bears and black bears interbreed?
8) What do grizzly bears eat during the winter?
9) What is the difference between grizzly bears and brown black bears?

"I would now like to ask about your opinions and past experiences with grizzly bears."

10) Do you own or rent any land on grizzly bear habitat?
11) Have you or anyone you know had any problems with grizzly bears on your public or private land?
12) Who would you contact if you had an incident with a grizzly bear?
13) If a grizzly bear is reported on private property should it be killed, removed, or left alone?
14) How do you feel about grizzly bears being in and near urban areas?
15) How do you feel about having grizzly bears in your neighborhood?
16) Can we live with grizzly bears? If yes, then how?
17) How do grizzly bears help and/or hurt the local economy?
18) What threats do you feel the grizzly bear poses to you and your family?
19) Do you think that more land should be designated as grizzly bear habitat?
20) Do you think there are grizzly bears in the Selway-Bitterroot Wilderness? If yes, approximately how many?

"I would now like to ask a few questions regarding policies toward grizzly bear recovery."

21) How do you feel about putting grizzly bears in the Selway-Bitterroot Wilderness?

22) Do you think the government should be funding the placement of grizzly bears into the Selway-Bitterroot Wilderness?
23) How do you feel of the government's involvement on the putting of grizzly bears in the Selway-Bitterroot Wilderness?
24) Do you feel it is a local or national issue?
25) Have you had any problems with wolves in the past and does the way the wolf reintroduction was handled in anyway affect your attitudes on a grizzly bear reintroduction.

APPENDIX C

NATIONAL SURVEY OF FISHING, HUNTING, AND WILDLIFE-ASSOCIATED RECREATION IN MONTANA – USFWS 2001

Activities in Montana by U.S. residents

Fishing

Anglers.....349,000

Days of Fishing.....4,068,000

Average days per angler.....12

Total expenditures.....$292,050,000

Trip-related.....$148,824,000

Equipment and Other.....$143,226,000

Average per angler.....$818

Average trip expenditure per day.....$37

Trip and equipment expenditures by Nonresidents in Montana.....$101,392,000

Hunting

Hunters.....229,000

Days of hunting.....2,442,000

Average day per hunter.....11

Total expenditures.....$237,605,000

Trip-related.....$107,072,000

Equipment and other.....$130,533,000

Average per hunter.....$1,027

Average trip expenditure per day.....$44

Trip and equipment expenditures by
Nonresidents in Montana.....$63,771,000

Wildlife Watching

Total Wildlife Watching Participants.....687,000

Nonresidential.....511,000

Residential.....341,000

Total Expenditures.....$350,335,000

Trip-related.....$207,496,000

Equipment and other.....$142,840,000

Average per participant.....$510

Trip and equipment expenditures by
Nonresidents in Montana.....$157,750,000

Source: United States Fish and Wildlife Service. 2001 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation

APPENDIX D

NATIONAL SURVEY OF FISHING, HUNTING, AND WILDLIFE-ASSOCIATED RECREATION IN IDAHO – USFWS 2001

Activities in Idaho by U.S Residents

Fishing

Anglers.....416,000

Days of Fishing.....4,070,000

Average days per angler.....10

Total Expenditures.....$310,872,000

Trip related.....$116,222,000

Equipment and Other.....$194,650,000

Average per angler.....$718

Average trip expenditure per day.....$29

Trip and equipment expenditures by nonresidents Idaho by nonresidents in Idaho.....$84,894,000

Hunting

Hunters.....197,000

Days of hunting.....2,100,000

Average days per hunter.....11

Total Expenditures.....$230,841,000

Trip-related.....$83,091,000

Equipment and other.....$147,750,000

Average per hunter.....$1,136

Average trip expenditure per day.....$40

Trip and equipment expenditures by
Nonresidents in Idaho.....$57,223,000

Wildlife Watching

Total wildlife-watching participants.....643,000

Nonresidential.....451,000

Residential.....333,000

Total Expenditures.....$227,470,000

Trip-related.....$96,807,000

Equipment and other.....$130,663,000

Average per participant.....$354

Trip and equipment expenditures by
Nonresidents in Idaho.....$88,757,000

Source: United States Fish and Wildlife Service. 2001 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation